

The MILLING WORLD

and CHRONICLE OF THE GRAIN and FLOUR TRADE.

PUBLISHED EVERY THURSDAY MORNING.

VOL. X.—No. 1.

Buffalo, N. Y., May 1, 1884.

\$1.50 Per Year.
Single Copies, 3 Cts.

A SHORT HISTORY OF MILLING.

WE translate from *Allgem. Muehlen and Masch. Industrie Zeitung*, much of the following matter upon this interesting subject. There are no records of regular mills prior to the Christian era; the only method known by which grains could be reduced to flour, was by a stamping in mortars, a process facilitated by a preceding heating of the cereals. From this stamping, *pinsere* in Latin, the early bakers were called *pinsores*, latter on *pistores*, and as an illustration of the persistency of names in some parts of the world, the bakers in a few of the less accessible places of Germany, are to this day called *pfisters*. Pestel and mortar were, as a rule, made of wood, and covered with metal. The labor was performed by the women, especially by female slaves.

Mills of some kind were, however, known at an early date. We find mention of it in the old testament; in Greece the invention of mills was attributed by some to the goddess Ceres, by others to a man named Mylas, from whom the name of mill is supposed to be derived. Homer's poems allude to mills, but only to handmills operated by female slaves. Later on improvements were made and mills were classified according to their motive power into hand, animal and water mills; all of these had the one thing in common, namely that the grain was ground between two stones, of which the upper was movable, the lower stationary. Mills of that kind were in use even in the middle ages, and in the Orient we find them even to-day. Of course some of the ancient mills were better than others, but the difference was small.

As long as milling was not developed into a distinct profession, such mills were used in private houses, or in sheds attached to the dwellings of the people. Female slaves operated the handmills, singing as they worked. The singing, as a matter of course, ceased when regular millers came into existence; then slaves and prisoners supplied the motive power and the heavy labor was often carried on night and day. In addition to the toil, the laborers had to carry a circular piece of wood fastened around their neck of such a size that the hand was unable to touch the mouth; this was for the purpose of preventing the eating of any of the flour on the part of the slaves. These "blood-mills," as they were popularly called, were abolished with the introduction of Christianity. As the business of the miller increased, human labor was found inadequate, and animals had to supply the deficiency; horses, donkeys and mules found in this way an abundance of labor to perform. Of course, such "animal mills" were larger than the handmills, and the animals were harnessed to the gear which operated the running millstone; a gag, similar to that formerly employed for man, prevented the animals from eating any of the grain or flour.

A great step in advance was taken with the invention of the water mill. The first mention of these we find during the reign of Mithridates, King of Pontus in Asia Minor, who fought the Romans from 88 to 66 B. C. Rome itself adopted and introduced water mills in the first century of our era; but not until the fourth and fifth century did they obtain a general recognition

by the people. In 536 A. D. when the Gothic king Witiges besieged Rome, and had cut off all the water supply from the city, its commander Belisar anchored large boats upon the river Tiber and built mills upon these, utilizing the current of the water as motive power. From that time up to the present the so-called ship mills have been in use more or less, in many parts of the globe.

It seems that prior to the introduction of ship mills, milling and baking had been classed as one profession. When the location of the mill was transferred into the middle of a river, baking was pursued as a separate branch of trade. Very little is known of either millers or bakers in the earlier part of our era. Palladius, living in the fourth century, recommends, in a work on agriculture, the establishment of mills wherever running water is to be found.

Windmills must have been unknown to the ancient writers, for we find no mention of them anywhere. The first note of a mill operated by wind power is found in 1105, when a monastery in France obtained the necessary license for its operation. In Germany the first windmill was built at Speyer in 1395, but the miller to run it, had to be imported from Holland. A special license to erect a mill was needed even at an early date, although originally everybody had the privilege to build on the banks of rivers or on waters owned by him. During the middle ages milling regulations were introduced, and only the chief magistrate of the land had the power to grant a license for the building of a mill anywhere. At that time there were also introduced certain district mills, who had the exclusive privilege of grinding all the grain raised in their district, and the cultivators were not allowed to take their crop into another mill.

The millers, owing to their scattered localities, formed no distinct guild during the middle ages, and milling was, up to within recent times, considered as a dishonest trade, so much that miller's sons were not taken as apprentices in any other trade. Fortunately advancing civilization has destroyed the unjust prejudice. But to return to our earlier dates, ordinarily the grain was ground once; but if a specially fine article was desired, it was ground twice and then sifted. Barley and wheat were mostly used. Rye was not received with favor, and was looked upon as indigestible. The barley was stamped in mortars, much after the ancient style of mills, and, to obtain a delicate color in the product, it was mixed with white clay.

Bread in olden times was made almost exclusively from wheat flour. The barley flour was simple, made into a dough and formed the common food of the agricultural population, a remnant of which we find in the "Polenta" of the Italians of to-day. The ancient Greeks made at times bread from rice, almonds and mulberries, in addition to the wheat. Baking, of course, differed widely from our present system. The baking trough was made of wood, seldom of stone or clay. Epicures forced their slaves to wear gloves when kneading the dough, and a covering before their faces to prevent any possible contamination of the product by sweat or breath. Some utilized animal power for the kneading operation, similar to the grinding mills. In the excavations of

Pompeii baking ovens have been found similar to these known to the ancient Hebrews. In the early times a separate profession of bakers did not exist, every household made its own bread, and this work done by the thrifty housewife, was performed for the rich by the cook, so that the terms of cook and baker were often used as synonyms.

Besides bread the ancients had several hundred kinds of cake, many of which were used exclusively for religious purposes as offerings. In latter times there came into existence quite a variety of cake and bread bakers. The bread of olden times did not bear a very strong resemblance to our present commodity; it consisted of a thin layer baked hard, and as knives and forks were an unknown luxury, it was simply broken into larger or smaller pieces.

In the Bible we find a note that granaries existed in ancient Egypt for the storing of the grains, and that bakers were employed in these storehouses, *i. e.* slaves, who prepared the bread from grain under the supervision of a chief baker. Even after the fall of Rome and Greece, when the Germans were masters of Europe, between 400 and 600, the baking was done by slaves. Charlemagne, the powerful protector of all culture, had bake houses erected upon his different domains, where bread was made by slaves, male and female. Bishop Salmo of Constance, during the tenth century, erected in the monastery of St. Gallen an oven with a capacity of more than one thousand loaves of bread.

Bakery was not made a free and independent trade until the number of cities increased, for with the growth of the cities the different trades formed and maintained their respective guilds, and bakers were allowed to take their place among them, recognized and acknowledged as a free and honorable trade.

CONSTRUCTION OF HIGH SPEED BREAST WHEELS.

Ed. Reubold, in *Die Muehle*.

Many falls of water up to a height of five feet, can claim the peculiarity that, during a large part of the year, the level of the back water is subjected to but very small variations. This will be the case if the cross section of the tail race is very large and deep in proportion to the quantity of water to be carried off. If in addition to this, the watercourse below the wheel offers by peculiar formation, a free and uninterrupted flow even to a larger volume of water, there will be no appreciable amount of back water to interfere with the working of the water power. For water power so situated, the high speed under-shot wheel or the breast wheel, with a rotation of about eleven or twelve feet per second, is to be preferred to a wheel of equal capacity with a rotatory speed of only about seven feet.

When making plans and drawings for a breast wheel, its lowest point is generally placed one-half a paddle depth below the average height of the back water during action. From this base the dimensions of the wheel and position of the flume are calculated. Certain peculiarities of the back water are seldom taken into consideration, and so it happens that many mill furnishing establishments do not care to build such wheels, but their construction is generally attended to by a competent mill-

wright, who by observation and comparison is enabled to realize a good efficiency, without exactly knowing the reasons why. The main advantages of a high speed water wheel for mills are:

1. Its cheapness; the wheel itself being smaller, costs less than a slow speed wheel which needs, perhaps, double the quantity of material in its construction. Then we gain the loss of transmission, as we start with a larger number of revolutions of our motive power.
2. The high speed wheel exerts a regulating action like a fly-wheel.
3. Mills with more available power can use several wheels, each operating two or three runs, and this is a great convenience, and will create less disturbance than a central single motive power.

For an efficient high speed wheel the constancy of the level of the back water is of prime importance. Careful observations in this direction must be made, and the results reported to the millwright before a decision or selection of a motor is made. When the circumference of the wheel attains a speed of eleven or twelve feet, the speed of the water in the flume will differ from it but little; only the lower part of the water, as it issues between flume and wheel, has a somewhat higher speed than its upper portions. This velocity of eleven to twelve feet per second of the inrunning water, corresponds to a pressure of a column of $2\frac{1}{2}$ feet high; consequently, if there was no obstruction of any kind, the water would, theoretically, again rise to a height of $2\frac{1}{2}$ feet, practically, however, this result has never been attained. If we construct for such a wheel a lengthy tail race of wood, the sides of which are a little higher than the highest back water level at which work can be carried on, we find that the water, leaving the wheel with a velocity of twelve feet per second, drives the inrunning back-water backward to a certain height with the production of lively waves.

In many high speed wheels the observation can be made, that the level of the water in the tail race is often from ten to twelve inches lower than the water in the surrounding channel. This fact can be utilized in the construction of a high speed wheel, and forms an important factor in its capacity. Generally these wheels are built with a long tail race, having a grade of about three per cent. During low water the back pressure is first manifested in the lower end of the race, and as the level of the back water ascends, this back pressure slowly rises against the wheel. The turbine utilizes the actual power of the water, why should it be impossible to obtain approximately the same results with a water wheel.

The above mentioned difference in the level of the water inside and outside of the tail race, which is due to the rotation of the wheel, can be utilized in favor of the plant during its construction. Experience has taught us that we can compute for 9 or 10 inches of fall of water more than we really have. The loss of power due to the high speed of the wheel as it receives the water, is in part recovered in this manner. Again the impact of the water against the paddle is a source of loss of power, and if we try to reduce this to a minimum, we find that the desired results can be obtained only when the surface of the water strikes against the radially placed paddles with as little force as

possible; this takes place when the relative directions of the surface velocity of the inflowing water and the external high speed periphery of the wheel unite in a very small angle upon the paddle. In a high speed wheel only plain, radially placed paddles are to be used, they could even economically be placed a little downward, if it were not for the drawback that such paddles are liable to take up too much water from the tail race.

Above all we must take care that the inflowing water does not strike the lower end of the paddle, as in such case the paddle would strike down upon the flowing water, not only with a loss of power, but also effecting ruin of the wheel. The efficiency of such a high speed wheel is only about six per cent less than that of a common breast wheel, and if cheapness in the construction is the great desideratum, the high speed wheel, under proper conditions of back water, will give fair results. If the fall of the water is less than 4 feet, the difference in efficiency is still smaller. Exact rules about the depth and grade of the tail race cannot be given for a high speed wheel. This can be determined only by a long continued careful observation of the volume and level of the water.

We often meet a mill with high speed wheels which is to be rebuilt; the old wheels are taken out and replaced, at a large expenditure of time and money, by a slow wheel and corresponding interior changes. In the beginning everything is lovely, because the novelty is generally pleasing; after a year or so, the owner, however, is forced to admit to himself, that his old water wheels were not so bad after all, and that the money expended for the new wheel would have been more profitably employed in internal improvements of his mill. All money expended for water power, excepting for repairs, unless it increases the efficiency either in quantity or quality, is irrevocably lost.

WHY OUR TEETH DECAY.

We are living in an age where the simple statement of a thing is not accepted as a fact unless you can answer the question. "Why is it so?" This constant inquiry into the cause of the effect is a very striking attribute of the present time, and as a rule, this kind of curiosity exerts an elevating influence upon the mind of the individual, because it induces him to study, and studious habits increase with the advance of the study itself. The difficulty generally lies with the awakening of the first interest. The simple fact that water ran past our mill in a sufficient volume or with a fall high enough to drive our machinery, was until recently looked upon as a self-evident fact. Since the laws of physics became known, we have found that the little drops of water, which to-day pass through our turbine, may run all the way to the ocean to be evaporated, to ascend into the air, forming clouds, to descend again as rain, hail or snow, feed some springs perhaps dozens of miles away from our mill, and finally again arrive at our turbine to be used again.

Analogous inquiring spirit leads us to-day into the consideration of the question "Why do our teeth decay?" Is it the fault of the millers, because they persist in removing the bran from the flour, as some people would like to make us believe, and by so doing disturb the healthy nutrition of the teeth? Is it advancing civilization with its attending train of vices and other violations of the laws of nature? Have the habits or station in life of the people anything to do with it? There are a multitude of other questions, but the above few will do for to-day.

THE MILLING WORLD has at various times called attention to the erroneous idea that the white or brown bread could in any

way make even the slightest difference in the nutrition of our American citizens, who live on a mixed diet; who more than counterbalance any possible deficiency of earthy salts and albuminoid substances in their bread, by an abundant supply of meats. Therefore we need not discuss this question any more.

The question whether advancing civilization has anything to do with the decay of our teeth, is more complicated and more difficult to answer.

The museum of archaeology at Cambridge, Mass., contains a collection of about 2000 skulls of prehistoric races, Peruvians, Mexicans and mound-builders, and because the various forms of tooth diseases of our present day are also found in these ancient skulls, this is used as an argument, that civilization has nothing whatever to do with the health of the teeth. On the face of it, this seems very plausible, but closer investigations tend to destroy the handsome theory. We know as a positive fact, that Peruvians and Mexicans had attained a very high degree of civilization long before the advent of the European; we also infer that the mysterious mound-builders, of whom we know nothing beyond their mounds, must have been civilized enough to live in large well settled and governed communities. Thus instead of dealing with primitive people who lived in absolutely natural conditions, we find in the skulls at Cambridge, the remains of civilized men. In addition to this, these remains were taken from mounds and tombs, and suggest the best classes of the society of that day, because nobody would have taken the trouble to preserve the memory of a poor man by costly or elaborate buildings. So the argument that civilization has nothing to do with the destruction of the teeth falls to the ground.

The habits of people are undoubtedly an important factor in this connection, but it would be exceedingly hard to obtain any reliable data to demonstrate it; partially, people's habits are not open to inspection, partially men don't always care to talk about them, and while certain habits, such as cleanliness, have beyond doubt a decided influence on the health of the teeth, we cannot prove in any way to what extent this does occur. In all discussions about the decay of teeth one important factor has been ignored; and this is the very one which is of interest to millers in the discussion of "White versus brown flour," that is "Use." If we use our arm systematically, we strengthen it by the accumulation of large muscles, while we weaken it and transform it into a mere skeleton, if we keep it tied up in a sling. The pedestrian can, by training, subject his leg to an immense strain, which he would never be able to endure without a constant and systematic use. So almost every part of our body can be strengthened by exercise, and why should our teeth be an exception? Here the question of white and black bread find its solution. White bread implies an advanced civilization, black the opposite. Black bread eaters have, as a rule, fine teeth, even to such an extent that in parts of Germany where black rye bread is the staple food, the brilliant "Schwarzbrot-zachne" (black-bread-teeth) have become proverbial. But, we ask, is this due to the improved nutrition? Not by any means! It simply implies increased exercise. Such black bread is not baked fresh every day, but in lots which last for weeks, and such old black rye bread needs for its mastication the exercise of the teeth to a very much larger extent than the mastication of fresh white bread, which is, as a rule, swallowed in lumps. And here we find the keynote to this controversy. Improved circumstances induce a deterioration of the teeth and the constant employment of thousands of dentists, not because civilization and better

methods of living directly influence the well-being of the teeth, but because the exercise of the teeth is almost entirely dispensed with. The better the circumstances of the people, the more carefully is every part of the food softened before it is eaten, the teeth are hardly ever called into activity and, as a natural consequence, they deteriorate in strength and solidity, like the arm or leg would if not exercised.

Exercise is the great factor in the preservation of the teeth, not the alleged stupidity of the miller. As long as the chewing process is kept up upon something that will allow the teeth to exert themselves, white or black bread will make no difference, if it only presents an obstacle to the opening and closing of the mouth, and forces the teeth to work. We know now, and also accept it, that a certain amount of physical exercise is necessary to preserve the well-being of the body; by the time that all admit, that, in a similar way, exercise is necessary for the well-being of our teeth, the constant and careful softening of all the foods we eat will be dispensed with, and a certain amount will be given in a condition solid enough to necessitate mastication and exercise of the teeth. Then these useful, but only too often very painful, organs will keep in good condition and the best dentist will be he who by careful advice can manage to preserve the largest number of teeth in good condition until old age or death.

AUSTRIAN MILLING STATISTICS.

[From Oesterr.-Ungar. Mueller Zeitung.]

The publication of the statements of the various mills of Budapest simultaneously with the result of investigations made to determine the proportion which the number of the mill employes bear to the output, give us some very interesting data with regard to the high or low dividends of different mills.

The daily capacity of the different mills at Budapest and the number of their employes, is as follows:

	Metercentner.	Employes.
First Ofen Pester mill....	2800	474
Concordia.....	2000	363
Pannonia.....	2500	322
Roller mill.....	2400	444
Miller and Baker's mill....	1700	288
United mill.....	1600	285
Haggenmacher.....	1900	282
Victoria.....	1200	219
Gizella.....	2100	198
Elizabeth.....	1000	176
Louisen.....	1100	167
Total	20,300	3,218

The daily capacity in proportion to the number of employes, ranks as follows, giving the number of metercentners to each employed of the mill:

Gizella.....	10.60 mte.
Pannonia.....	7.76 " "
Haggenmacher.....	6.74 " "
Louisen.....	6.59 " "
First Ofen Pester.....	5.91 " "
Miller & Baker's.....	5.90 " "
Elizabeth.....	5.63 " "
United.....	5.61 " "
Concordia.....	5.51 " "
Victoria.....	5.48 " "
Rollermill.....	5.40 " "

As a rule, these figures allow the deduction that the decreasing capacity is in direct proportion to the decreasing height of the mill. This may be due to the fact that some work, which can be performed automatically in high buildings by the aid of machinery, has to be performed by manual labor in low buildings which cover a large area.

FIRES AND THEIR PREVENTION.

The annual amount of losses by fire is, says the *Memphis Appeal*, so great that sufficient public attention is not aroused to lead, at least, to the inquiry whether such losses are necessary and unavoidable. Losses by floods and tornadoes cannot be prevented, for they come without the intervention of human agency. Losses by fire, on the contrary, are commonly the effect of human agency. It follows, therefore, that

they are, to a great extent, capable of being lessened by human care and ingenuity. We develop a wonderful amount of skill in dealing with fires after they have broken out; why do we not exhibit as much ingenuity combined with constant care in preventing the occurrence of fires? A very easily applied plan would do much to bring about habitual efforts of a preventive character. Have a law that every person on whose premises a fire takes place shall be called upon to show, to proper officials, how and why the premises took fire; or if unable to do that, to show what care was constantly exercised and what means provided to prevent fire; or in case of its occurring to extinguish it on its discovery. The very fact of having to face such an inquiry would lead to the exercise of a degree of care that would greatly diminish the number of fires. That there is sufficient reason for the establishment of such examinations, is evident from the tremendous annual losses the community suffers every year, as shown by tables published by the *New York Chronicle*, in which it is shown that, during the last nine years, the immense sum of \$778,642,358 has been destroyed in the United States and Canada by fire.

Eight years ago the combustion of property was going on at the rate of about \$70,000,000 a year, or \$1,000,000,000 in fifteen years; now we are burning \$100,000,000 a year or at the rate of \$1,000,000,000 a decade. Continuing at this rate, in ten years we shall burn \$150,000,000 annually. Fifty years ago the fire loss was only \$14,000,000 a year, but that loss increases in a greater proportion than the increase in the value of property; it doubles every twenty years, while thirty-three years are required to double the population. These facts certainly are of sufficient importance to demonstrate the propriety of adopting measures calculated to decrease the occurrence of fires. The investigations of the insurance companies prove that an immense majority of the fires that occur are due to a want of care, such cases including children playing with fire, drunkenness, fireworks, lighting fires with kerosene, leaving matches about, and similar acts of imprudence or carelessness. Were such examinations made into the causes of fire as we propose, the developments made would show what are the most prevalent causes of fires, and the proportion of those causes. With this knowledge every citizen would understand where the greatest liability to danger lies, and the rational part of them would give their attention accordingly. As "an immense majority" of fires are caused by want of care, it is evident that the number of fires could be reduced much more than one-half by substituting care for carelessness. That care would be secured, to a great extent, by requiring the examination of the occupants of burned premises immediately after the occurrence of a fire.

THE GRAIN TRADE OF SOUTH GERMANY.

The situation in regard to the grain trade in Southern Germany, says the *Walzen Mueller*, has undergone neither change nor improvement, although the stock on hand diminished considerably during the past month, in consequence of an active demand from Switzerland and other sections. The prices obtained were ruinous for the trade, because the competition between the older grain exporting countries has been increased on account of new additions to their list, such as California, the Argentine Republic, and East India; so much even that Russia, hitherto the main source of supply for Southern Germany, has been forced to reduce her grain prices considerably. All these conditions enabled Mannheim, the grain market of Southern Germany, to replenish the diminished stock at a very cheap,

aye, at a never so low price, and shipments from Odessa and Nicolajeff, San Francisco, Buenos Ayres, and Bombay, refilled the storehouses again in a very short time. Not even the United States were able to keep prices high against such overwhelming competition, and a considerable reduction was necessary to again allow any importation of American grain at a profit to the purchaser. This import is expected to increase because the freights are exceptionally low, and at the same time, the United States will not care to take a passive part any longer now, after it is demonstrated that they have lost their leading position in the grain markets.

In consequence of the close competition between so many grain-producing countries on the West-European markets, the prices are in fact lower in London, Antwerp and Rotterdam, than they are at Budapest; Mannheim quotes the same prices as Vienna and is thus enabled to take the place of a powerful rival of Hungary. It is hardly probable that any change for the better should occur in these unfavorable conditions of the Austria-Hungarian export markets, before the harvesting of the new crop; it does not even seem impossible, that, for instance, a rich harvest prospect in America will reduce the grain prices still lower, and that this overproduction will cause conditions similar to those which recently appeared in the coffee trade. In that case the exports from Hungary are reduced to a minimum, and most of the shipments go towards the different Rhine stations to be sent by water. This water transportation on the Rhine river has of late become an important aid to the Hungarian export trade, and although it is once in a while obstructed in part by low water, the navigation is improving from year to year.

INDIA WHEAT COMPETITION.

It seems, says the Cincinnati *Price Current*, there are two sides to the question of the ability of India to produce wheat cheaper than other countries, and in sufficient quantities to give a large surplus for export. Sir James Caird, in his evidence before the Parliamentary Railway Committee, recently stated that the exceptional progress made in the export of wheat from India during the last two years was, no doubt, due to the exceptional seasons which had occurred since the last famine. He was not so sanguine about wheat as many people are. The population of India is increasing so rapidly that in ten years it will require the whole of the wheat now exported, unless there is a very much larger production than at present. He quoted the head of the agricultural department upon the question of the cost of producing wheat to the effect that in five provinces the cost in 1882 was 18s 6d per quarter, which is equivalent to about 58 cents per bushel. This is about 50 per cent. more than some of the accounts in the newspapers have stated it to be. He also said that he did not think that the average production of wheat in India exceeded ten bushels per acre, and any great increase of production from improved agriculture would depend upon the price of wheat and the temptation thereby offered to the Indian grower to cultivate it.

As to the cost of carriage from India, as compared with America, to Great Britain, setting one thing against another, it is said the two countries would be very much on a par. This seems to be a very fair statement of the case, for it is in accord with the experience of other countries. A series of favorable seasons may give a large surplus for export, and bring prices down so low as to discourage production; then there will be a re-action, and higher prices will prevail. There is nothing in this which need to discourage wheat cultivation in the United States, there may be a year or two of un-

profitable outcome here as elsewhere, but the world's average production of wheat for a series of years, has never been excessive, and probably never will be, the immutable laws of supply and demand serving to produce an equilibrium.

Apropos of the foregoing it is said that India wheat has made its appearance as part (shall we say) of the "visible supply" at Chicago. The announcement is made in this way by the *Tribune* of that city: "We note that some samples of India wheat were exhibited to trade here yesterday, embracing several varieties or grades, chiefly that classed as Bombay. The wheat is certainly fine though apparently not equal in value to our No. 2 red, but good enough to indicate that those who decry it do so without any too good an acquaintance with the subject. If India has much of that wheat to offer at low prices she will be a powerful competitor with the United States."

FROM our Minneapolis letter this week it will be seen that the Washburn mills of that city have been, for two weeks past, turning out flour at the rate of 6,000 barrels per day, solely upon orders placed with them in the past, and which until recently they were unable to complete. This flour has a reputation in the markets which will always insure its sale at remunerative prices, yet its reputation has been gained not by the prestige of the name Washburn but because its strength and purity have been strictly maintained. This is not the only flour that enjoys a high reputation, and we refer to it simply as a pointer for some of our milling friends who seemingly ignore the fact that quality of product has much to do with margin of profit.

CORRESPONDENCE

A CHANCE FOR SOMEBODY.

Editor *Milling World*:

On the west bank of the Big Blue River upon an elevated plateau, in the center of the south half of the rich county of Gage, surrounded by beautiful groves, is situated the young city of Blue Springs. Chief among its many attractions which are drawing the settler, is its water power, which is admitted by all who are competent to judge, to be the best in the state of Nebraska. At this point the banks are high, and the river is narrow and deep. The dam is so situated on a curve of the river, that the current is thrown to the center of the stream, so that the little old mill, built a number of years ago, has never received the slightest injury from the spring floods and the passage of the ice down the stream, which fact is peculiar to this power, all other mills or dams upon "the Blue" requiring more or less repairing after high water of each year.

Peculiar to Blue Springs is its nearness to excellent stone quarries, from which are taken the best quality of building stone to be found in the state. The quarrying of stone for market bids fair to soon become one of the principal industries of this busy growing little city. The city enjoys one other peculiarity in its mineral springs, after which it is named. These springs are now attracting the attention of the "medical world" for their peculiar healthful medicinal qualities. The benefits from two competing lines of railroad are enjoyed by the shippers and travelers, to and from this place. The Omaha and Republican Valley railroad, connecting the Union Pacific with the Southern Pacific, has its depot, elevator, coal sheds, and water tanks, near the mill, and the Republican Valley Railroad, under the management of the Burlington & Missouri River Railroad Company, passes down the west bank of the river forming a junction with their Denver and Kansas city line, south of town; thus giving railroad facilities excelled by no other towns in the State, except Omaha and Lincoln, the capital.

The stranger in visiting this nucleus for what bids fair to soon become a city of large proportions, would be struck by the unusual number of fine buildings for a town so new, among which are a block of two story brick stores with their large plate-glass windows, through which are to be seen stocks of goods which you will be told inventory from five to twenty-five thousand dollars.

The four churches, one of which is a handsome brick, together with the large two-story brick school house, are an exponent of the character of the people who started and are promoting the young city.

One would be at a loss to account for the prosperity so apparent in town, unless he should take a drive into the surrounding country where he would learn the fact that the trade to support and prosper the city is drawn from a twelve mile radius of country, not to be surpassed in beauty and agricultural advantages by any west of the Alleghenies. By the new houses, and the large barns being built where the houses appear to be of a few years standing, the inspector is convinced that the "Valley of the Blue" has a bright future before it, and a liberal support for the town that will turn its wool and flax into cloth, its straw into paper, and its grain into flour. You will be told that in all this valley there is not yet a woolen mill, and that the county of Gage alone, is feeding over forty thousand sheep, and that the necessity of such a mill is being keenly felt by the wool growers. Should this meet the eye of any miller who is thinking of moving his business to one of the new western States, we would advise him to pay a visit to the "Valley of the Blue" and especially to the city of Blue Springs.

Blue Springs, Neb. E. J. RODERICK.



BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,

Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

BUCKWHEAT FLOUR

Always commands a better price, and gives better satisfaction to the consumer when made by the aid of Cransons' Silver Creek Roller Buckwheat Shucker. This is a fact which we can demonstrate to any miller who will write us.

G. S. CRANSON & SON,

Silver Creek, N. Y.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

By a miller and good stone man, worked custom and merchant mills both East and West. Good references. Address D. HALLORAN, 406 E. 15th street, New York, for J. BARRETT.

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

FOR SALE, "THE ALEXANDRIA MILLS," ALEXANDRIA, OHIO.

A New Process custom and merchant mill. Steam and water power, with saw mill attached. A railroad town of 600 inhabitants. In a good wheat growing locality. Will sell very cheap. Address, Box 140 Alexandria, Ohio.

FOR SALE.

Dearborn custom flour mills, 2-run stone, water power, 6-foot head. Located 13 miles from Detroit, and 2½ miles from Michigan Central R. R. Mill rebuilt past two years. Building 32x44. Nearest mill 8 miles. Address H. MOSELEY, Box 45, Dearborn Mich.

FOR SALE.

Grist mill, located at Arcade Center, N. Y. Has two small run of stone, water power, frame building. The premises, besides the mill includes two acres of land, frame dwelling house, barn, shed, etc., all in good repair and mill in complete running order. Address WM. BOLENDER, Arcade, Wyoming county, N. Y.

FOR SALE CHEAP TO CLOSE AN ESTATE.

Valuable mill property on P. & W. R. R., three miles from Pittsburgh city limits. Brick building 40x60, 3½ stories high, 3-run of stone with purifier and ample bolting and cleaning capacity for same. Also rye and cornmeal bolts. Good water power, 9-foot head. Address N. SHAW, Glenshaw, Pa.

FEED MILL FOR SALE.

A portable iron disk feed mill for sale. Well built, large capacity, and in perfect order; unpacked, as delivered from factory. Price, \$40. Address, O. F. F., drawer 203, Buffalo, N. Y.

WILL LEASE.

A mill in northern Indiana, southern Michigan, southern Illinois or southern Kansas. From 75 to 150 barrels capacity. Must be on railroad. State capacity, whether stone or roller mill, and very best terms, giving all particulars concerning property. Address "BUSINESS," care THE MILLING WORLD, Buffalo, N. Y.

WE WANT A GOOD TRAVELING AGENT.

And will make very liberal arrangements with him to represent our interests. Must be thoroughly posted in the mill-furnishing trade, and competent to make estimates for building new or remodeling old mills. All communications will be regarded as confidential. Address in first instance D. B. R. M., care THE MILLING WORLD, Buffalo, N. Y.

FOR SALE CHEAP.

One 6-horse power engine and 10-horse power boiler, all complete, price, \$350; one 8-horse power engine and 10-horse power boiler, price, \$375; one 10-horse power portable complete, price, \$350; one 10-horse power Russell Tractor, price, \$300; one 4-horse power vertical engine, price, \$120. Call or address for particulars EZRA F. LANDIS, Lancaster, Pa.

FOR SALE.

Second-hand No. 3 purifier as good as new. Price \$75.00. Second-hand 12-inch burr, iron frame middlings mill, \$40.00. Second-hand 18-inch middlings mill as good as new. Old French burrs, as good as mill as there is on the market, \$85.00. One 21-inch 2nd Eureka water wheel of the latest style as good as new, \$125.00. Address A. N. WOLF, Allentown, Pa.

NOTICE TO MILLERS, ETC.

Blue Springs, Nebraska, has the best water power of any town in the state. Those who contemplate building a flouring mill, factory, or other establishment run by water power will find it to their advantage to correspond with Sec. Board of Trade, Blue Springs, Nebraska.

FOR SALE.

Water Mill in Kansas. About 100 bbls. capacity. Ten feet head of water. Good stone flume and desirable merchant trade established. Averages 130 bushels daily in exchange. Located at a railroad town and county seat, in the best winter wheat belt. Will be sold at an early day to the right man. Mill now running day and night. Good reasons for selling. Address, with stamp enclosed for particulars, Lock Box 48, Vandalia, Ill.

RARE CHANCE.

For four thousand dollars can be acquired, with immediate possession, the Humboldt County Mill, situated at Livermore, Humboldt county, Iowa, and erected in 1882. Three-run burrs and one pony-run; large bolting capacity; boiler and engine good and ample in power; on side track of B. & N. R., and within 250 yards of the Minneapolis & St. Louis depot. In the best wheat section in Iowa. Terms reasonable. Apply to CHARLES HUTCHINSON, Oskaloosa, Ia.

GRIST MILL FOR SALE.

The undersigned having engaged in business in Louisiana has decided to offer his grist mill in the village of Brocton, for sale to the highest bidder, on the first day of May, 1884, at the mill in said village, at 2 o'clock p. m. The mill is two stories high with basement, is propelled by a new Burnham turbine water wheel, has three run of burr stones, new corn sheller, building and other machinery in first-class condition. THOMAS CAPWELL, Brocton, N. Y. T. S. MOSS, Agent.

FOR SALE AT A SACRIFICE.

A merchant and custom mill, water power, 45x70, two stories and basement, five run of burr; ready sale for all the buckwheat which can be manufactured, which has an unrivalled reputation; Cransons' roller buckwheat shucker, new last fall; kiln for drying grain; two dwellings; barn 40x60, three stories, eight stalls; ice house, new, 40 tons capacity; carriage house, etc.; 16 acres of land; situated three miles from railroad, one and a half from boat; railroad to be built this year passing premises. Satisfactory reasons for selling. Price, \$7,000. Address, E. N. SIPPERLEY, Westport, Conn.

SOME BARGAINS.

We have on hand the following machinery, which we have replaced at Hardesty Bros. mill, at Canal Dover, which we will sell very cheap:

Two No. 3 Hunter Purifiers, in good order.
One No. 6 Smith Purifier, good as new.
Two No. 3 Silver Creek Bran Dusters.
Two Double Set of 9x18 Stout, Mills & Temple Rolls one set corrugated, 20 cuts; other set 24 corrugations. Rolls were replaced by larger ones.
Four Gratiot Wheat Heaters, good as new.
Also a lot of Bolting Cloth, Pulleys, shafting, and other articles too numerous to mention. Address, THE MILLER CO., Canton, Ohio.

MILL PROPERTY FOR SALE.

Either a half or whole interest in the Rossville mill, situated at Rossville, Shawnee county, Kan., on the U. P. railway. This lively and business town contains all kinds of stores and shops, four churches, graded school, newspaper, land office, &c. It is 18 miles from Topeka, the Capital, and in the widest part of the Kansas river bottom where Millcross and Soldier creeks empty. This station ships more grain than any other station between Denver and Kansas City. The property is a comparatively new 50x80 feet three story stone building with a capacity of 75 barrels per day. Sixty-five horse power engine, almost new, improved machinery in the mill and in splendid condition. In addition there is a flour house holding six car-loads; coal house holding ten car-loads; elevator and corn dump and steam sheller of 5,000 bushels hulling and storage capacity per day. There is a side track by which all grain, flour, coal, etc., is handled directly in and out of cars. The mill has a storage capacity for 12,000 bushels wheat, grain in every bin can be handled by elevator. Adjoining to mill there is corn cribs and granaries. Also a two room office with Fairbanks grain scales. Good hog yards, good shelter and excellent access to water. Terms of sale reasonable and will be made known by addressing E. S. McCLINTOCK, Rossville, Kan.



PUBLISHED

EVERY THURSDAY MORNING.

C. A. Wenborne, Proprietor.

Office, Lewis Block, cor. Washington and Swan Streets.
BUFFALO, N. Y.

MR. THOMAS McFAUL is the authorized agent and traveling correspondent for this paper.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; can be remitted by Postal order, registered letter, or New York Exchange. If currency is enclosed in unregistered letter, it must be at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

EDITOR'S ANNOUNCEMENT.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

MILLERS' ASSOCIATIONS.

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NEW YORK.....J. A. Hinds, Sec'y., Rochester.

OUR COUNTRY'S POOR HEALTH.

FROM all commercial centers we have advices of a somewhat smaller volume of business than had been anticipated from, what has, by custom, come to be known as spring trade. In many lines of productive industry a material decrease in the number of hands employed has been effected, while in others, a cut in wages has taken place, the manufacturer, in both cases, being obliged by the existing dullness of business, to either limit his rate of production or the cost thereof. The prevailing dullness in business is attributed to our over-production, but thus far we have failed to note any cause being assigned for this over-production. Until a falling off in demand was experienced there was no over-production. We might, perhaps, assign as a reason for over-production, the dullness of trade, and for the dullness in trade, over-production.

There is no lack of money in the country, and there is, in the majority of the retail branches of the trade, seemingly no lack of purchases and sales. The buyer at retail has not, apparently, to any appreciable extent, curtailed his purchases. He must have clothing and food, and he buys them just about in the proportions he always has. The seller at retail has, however, put faith in the cry of over-production, and makes his purchases sparingly, buying, as the term is, in a "hand to mouth" fashion, and only as necessity compels. Comparatively few purchases are made upon speculation, or of what might be termed "novelties" in his particular line of trade. The business of the country is, by him, supposed to be in a most lamentable condition, and he is quite ready to talk of it to any and every one, and thus the disease spreads, until the great majority of us are almost, if not quite, of the belief that our whole commercial fabric is on the verge of total disruption.

Further than this. We are told that our treasury vaults are being filled to over-

flowing with silver dollars, and for this reason disaster is impending. The average man fails to comprehend why the possession of hundreds of millions of silver dollars signifies early and complete financial ruin, but the corner grocer tells him he read in *The Christian at Work*, a letter to that effect from a banker doing business in New York or some other city, and that settles it. The very fact that he doesn't understand why possession should mean disaster, apparently serves to more strongly convince him that the banker's views are correct. The corner grocer points out that the country is suffering from an over-production of merchantable wares, and from an over-production of silver dollars. Deplorable state of affairs indeed.

To add a palatable flavor to the situation the spice of tariff tinkering is brought out. One side is in a position to show that the entire removal of the tariff would result in a most extraordinary expansion of our manufacturing and agricultural interests, while the other can adduce equally as good arguments to prove the contrary. The tariff is, according to one party, the cause of the existing depression in business circles, while, if the other side may be believed, the depression exists simply because the tariff is not high enough. Then again this is presidential year and of course business must be dull. It would be entirely contrary to what Bill Jones asserts may be looked for as a concomitant of all presidential years, if such were not the case. It is Bill Jones' opinion that there may be a change in the party dominant, and he stands ready to demonstrate that this will be beneficial, or detrimental, (according to his political bias) to the best interest of the country. Uncertain as to which side of the political cauldron with first slop over, the business interests of the country, and Bill Jones, stand by to take in or unfurl sail as the requirements of the slopping over may dictate. This is a great country however, and it is highly probable it will come out all right yet.

81,888.

MILLERS' NATIONAL ASSOCIATION,
SECRETARY'S OFFICE,

MILWAUKEE, WIS., April 19, 1884.

To Members of the Millers' National Association.

In response to the request of the Sub-Executive Committee, the Geo. T. Smith Middlings Purifier Company, of Jackson, Mich., have filed in this office, their "Bond of Indemnity" in the sum of fifty thousand dollars, with names of three of the wealthiest citizens of Jackson as sureties, to protect and indemnify our members against any and all claims that may be brought for infringement of what is known as the Gilbert Sieve or Starch patent No. 81,888, recently sustained by the District Court for the Western District of New York.

In acceding to the request of the committee, the Geo. T. Smith Purifier Company have given additional evidence that they not only furnish a first-class machine, but will protect purchasers in their use.

Respectfully,

S. H. SEAMANS, Secretary.

The above communication, as readers will note, is dated April 19, but as the envelope containing it bears the postmark Milwaukee, Wis., April 22d, 7.30 P. M. it will be unnecessary to apologize for not giving it publicity in an earlier issue of THE MILLING WORLD. The action of the Geo. T. Smith Middlings Purifier Co., while entirely creditable to them, was expected. Indeed any different course would have been detrimental to their standing and business interests. They simply have carried to an honorable conclusion a pledge long since made to the public. No one anticipated that they would do otherwise than as they agreed. They have fulfilled their agreement and THE MILLING WORLD has pleasure in recording the fact. We haven't the slightest doubt that they would stand between any of their customers and troublesome litigation, whether or not such customer was a member of the Millers' National Association, although, the bond above alluded to assures indemnity only to members of that body. The closing paragraph of the above commun-

ication reads just a trifle queer in view of past utterances from the honorable body which sanctions it. There is a good deal of truth in the old saying that "all things come round to him who waits" or words to that effect.

THE MILLING WORLD acknowledges the receipt of the thirty-fifth annual report of the pork packing done in the United States, compiled by Mr. Chas. B. Murray, editor of the Cincinnati *Price Current*. To all who are interested in this department of the commerce of the country, the little pamphlet offers as complete a history of the twelve months ending March 1, as can be found. Production, value, supply, demand, past as well as present and future, receive due consideration, accompanied by accurate figures when attainable. The question of the healthfulness of American swine, which has stirred up so much discussion of late, is reviewed in a manner fair and impartial, and highly creditable to the editor. In addition to the statistics of the pork interest, we find in the pamphlet a table of the production, import and export of wheat and corn since 1866-67, from which we see that the production of corn has increased two-fold, of wheat three-fold during that time. The statistics relating to the different crops are given in a condensed tabulated form, which largely facilitate their study. Thus we find that in 1881 Ohio took the lead in wheat production, closely followed by Minnesota; in 1882 Illinois led, followed by Indiana, with Ohio third; in 1883 California raised the largest crop, with Minnesota at the second place. In fact the production of wheat taken in the customary geographical division of Western, Southern, Middle, etc., states, shows a decrease, comparing the crop of 1882 to that of 1883, in the above named three divisions, while the New England states, California, Oregon and the territories have increased their production. The valuable information contained in the report covers too large a field for a short notice, and THE MILLING WORLD fully appreciates the amount of labor and care bestowed upon its compilation.

AT various times, if our memory is not at fault, we have read in our contemporary the *United States Miller*, emanations from the pen of Mr. John W. Hinton, in favor of our protective tariff. Recently Mr. Hinton delivered an address in the Assembly Chamber at Madison, Wis., before the Wisconsin State Grange, upon this subject, and proof-slips of portions of that address have, we judge, been widely scattered. One of them has, in due course of mail, reached us, and has been carefully perused. We have a failing, and it is that we read everything for and against our tariff system. Thus far a "bang-up" good argument in favor of, or against, it has not come under our notice. This latest effort of Mr. Hinton's is, however, a little the weakest of anything we have seen. He asserts that Henry Clay, Abraham Lincoln, Andrew Jackson, U. S. Grant, Jas. A. Garfield, Washington, Jefferson, Madison, Monroe, Adams, Jackson, Van Buren, Harrison, Tyler, Taylor, Fillmore, Polk, Buchanan, Arthur, were, or are, all protectionists. They held protectionist views as a matter of conviction, not as a political creed. Mr. Hinton argues that these were all great men and therefore "protection" is the crying need of the country. Well we can't quite agree with him. The country may, possibly does, need a protective tariff, but the gentlemen alluded to, the great majority of whom are dead, may have been in error in their opinions, or what is no more unlikely, the conditions under which the world's industries are carried on may have changed.

It is well known that the majority of granaries and mills are more or less infested

with rats and mice, and it has always been a problem to find an efficient remedy. Poisons, traps and cats find their places, but the most effectual destroyer of these pests is unquestionably the owl. If any one of these birds can only gain access to a place infested with rats or mice, they soon make short work and kill more in a given time than half a dozen cats. A taxidermist of Indianapolis, who recently advertised for owls to stuff for sale, obtained about one hundred, and remains of mice were found in the stomach of every one. Millers would therefore do well to protect these useful birds wherever found, and encourage them as much as possible to nest on their premises. The ancient superstitions about the birds of "ill-omen" have fortunately disappeared, and we are now more accustomed to appreciate the services of animals, and in the destruction of rats and mice the owls fill their place in the economy of nature to perfection.

To the long line of bogus foodstuffs which are now palmed off upon the credulous public as the real article, in the shape of butter, sugar, cheese, milk, flavoring extracts, etc., etc., there has recently been added another, bogus coffee. Of course we have had such articles in the market for a long time, but the latest patent, we are told, is taken out upon a process by which the taste of barley, beans, wheat, etc., is transformed by means of an extract of willow bark, so that it is impossible to distinguish it from real Java or Mocha. It does seem that in the very near future we will drink our cup of Java coffee, taken from the neighboring wheat field; sweeten it with real West India sugar, manufactured in a near by glucose factory, and improve the taste of our bread with pure dairy butter, obtained at a neighboring oleomargarine establishment. We know that there are bogus flour brands in the markets, but as yet no ingenious inventor has discovered a substitute for grain and the millers of the land better look to their laurels if they do not want to be left behind in this constantly growing wholesale "bogus" foodstuff manufacture.

It is strange how old stories are sometimes dished up again. For instance an item has recently traveled through the papers about the German needle-maker who drilled a hole through one hair of the Emperor's beard. Well, twenty-five years ago we remember a German lady in the city of Hamburg who told the same story to her children substituting the King of Prussia for the Emperor of Germany. Another item is having quite a run which consists of a German farcical description of the coming American hotel with billiard rooms containing hundreds of tables and a spittoon 100 feet in diameter. This however appeared first on the completion of the Grand Pacific at Chicago, and is therefore not quite new.

AT this writing, and for some little time past, flour values have ruled low, except, and it might be well to stick a pin right here, where the reputation of the mill, the miller or the flour itself, has created a demand which will be satisfied with no other article. During the past four months many millers have lost money, but those who worked for and secured a demand for their flour have not worried much because of lack of profit.

"It is an ill wind that blows good to nobody." Now we are told by the Cincinnati physicians that the floods of the Ohio have cleansed that part of the city which has always been the starting place of disease. It really does seem then that the floods have done some good.

ESTABLISHED 1856.

EUREKA GRAIN CLEANING MACHINERY | GENUINE DUFOUR BOLTING CLOTH

OVER 18,000 MACHINES IN USE.

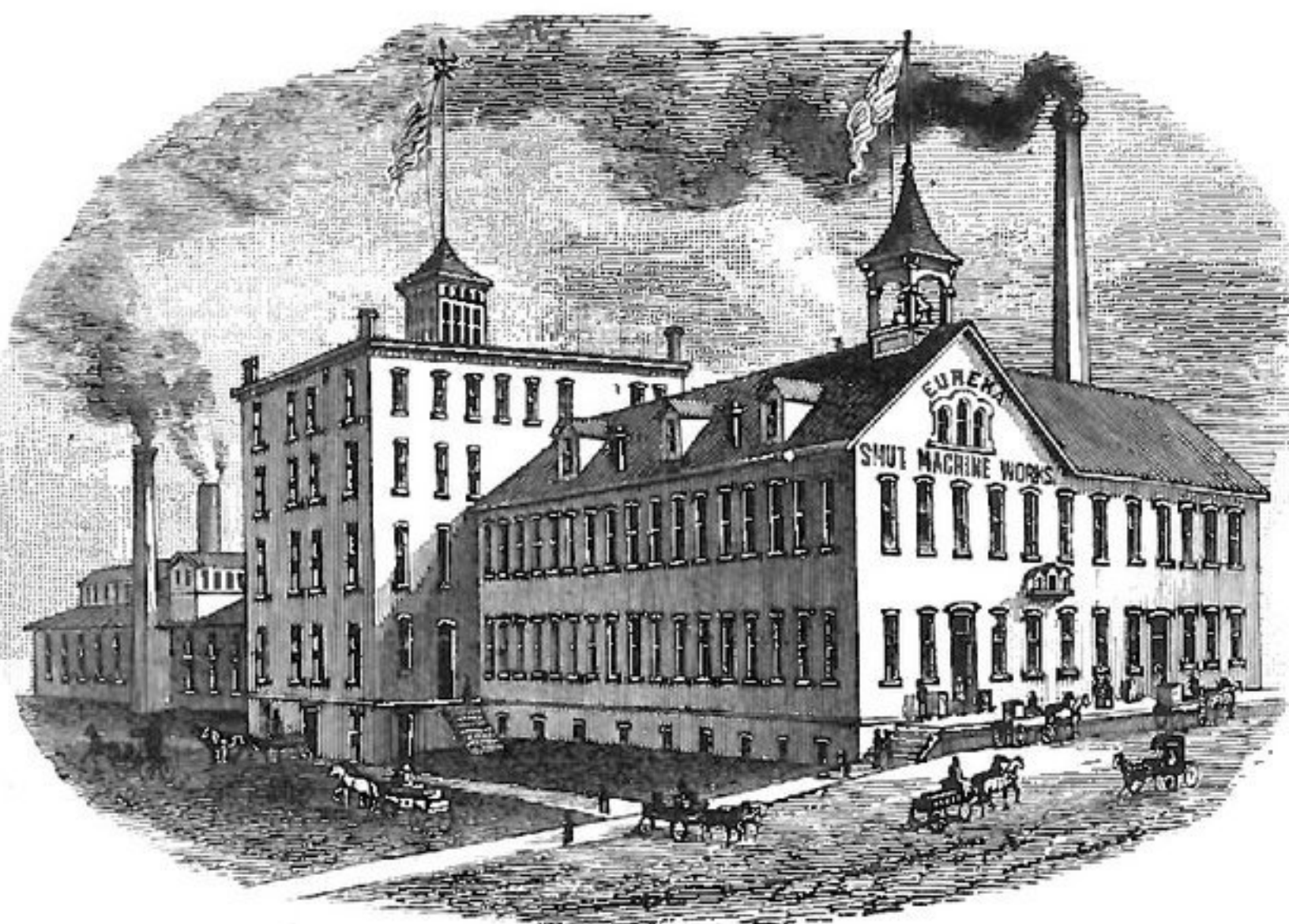
OUR LINE COMPRISES

The Eureka Separator,
The Eureka Smutter and Separator,
Eureka Brush Finisher,
The Eureka Magnetic Automatic Separator,
Silver Creek Flour Packer.

Our establishment is the oldest, the largest and most perfectly equipped of its class in the world, and our machinery is known and used in every country where wheat is made into flour.

HOWES & EWELL,
SILVER CREEK, N. Y.

European Warehouse and Office: 16 Mark Lane, London, E. C.
Gen. Agency for Australian Colonies and New Zealand.
Thos. Tyson, Melbourne, Victoria.



We handle this justly celebrated cloth in large quantities, and can fill all orders upon receipt. For such as may prefer a cheaper grade, we offer our

ANCHOR BRAND BOLTING CLOTH.

Guaranteeing it to be equal in every particular to any other cloth on the market, except the Dufour. We have handled it for years, have sold thousands of yards of it, and know it will fully sustain our representations.

Send For Samples of Cloth, Our Style of Making Up, and Prices.

HOWES & EWELL,
SILVER CREEK, N. Y.

THE IMPROVED MORSE ELEVATOR BOLT

THE KNICKERBOCKER CO.

MILWAUKEE, WIS., March 20, 1884.

Gents: Your Bolt is working well and beats anything in the way of a Bolt, centrifugal or any other, that has yet been invented. As a general thing we do not like to certify to a thing on so short a notice, but your machine is an exception. We will experiment as we have opportunity and see how many more machines we can profitably use. Wishing you all success, we remain,

Your truly,

E. SANDERSON & CO.

THE KNICKERBOCKER CO.

JANESVILLE, WIS., April 9, 1884.

Gents: I am fully satisfied with your Morse Elevator Bolt, it is a wonderful machine, and is as far ahead of the old Bolting Chest of Reels as the roller process is ahead of stone milling. Enclosed find draft for the No. 1 sent me, please forward the two No. 1 Bolts bought of your agent, one is for bolting patent stock, and the other low grade stock.

Yours Truly,

C. W. HODSON.

THE KNICKERBOCKER CO.

CLEVELAND, OHIO, April 3, 1884.

Dear Sirs: Regarding the Morse Bolt we cannot say enough in its praise. We have three different makes of Centrifugal Reels in our mill, and having given the Morse Bolt a fair trial alongside of them we can certify as to their merits. We have demonstrated the Morse Bolt will handle double the quantity the Centrifugal will and produce a better flour and cleaner finish. In fact any material in the mill can be handled with more economy and better results than upon any system we know of. The Morse Bolt being under the complete control of the operator is a point in its favor that cannot be over-estimated, and we believe when its merits are more widely known it will supercede the present mode of bolting.

Yours respectfully,

M. C. DOW & CO.

The Knickerbocker Co., Jackson, Mich.**THE EXCELSIOR ANCHOR BOLTING CLOTH TO THE FRONT.**

Recognized as the Queen of All Bolt Cloths by One-Third of the Mill Owners, Millers and Builders in the United States, and Their Verdict is

GIVE US THE EXCELSIOR AND NO OTHER!

OUR MAKING UP OF CLOTHS IS THE BEST.

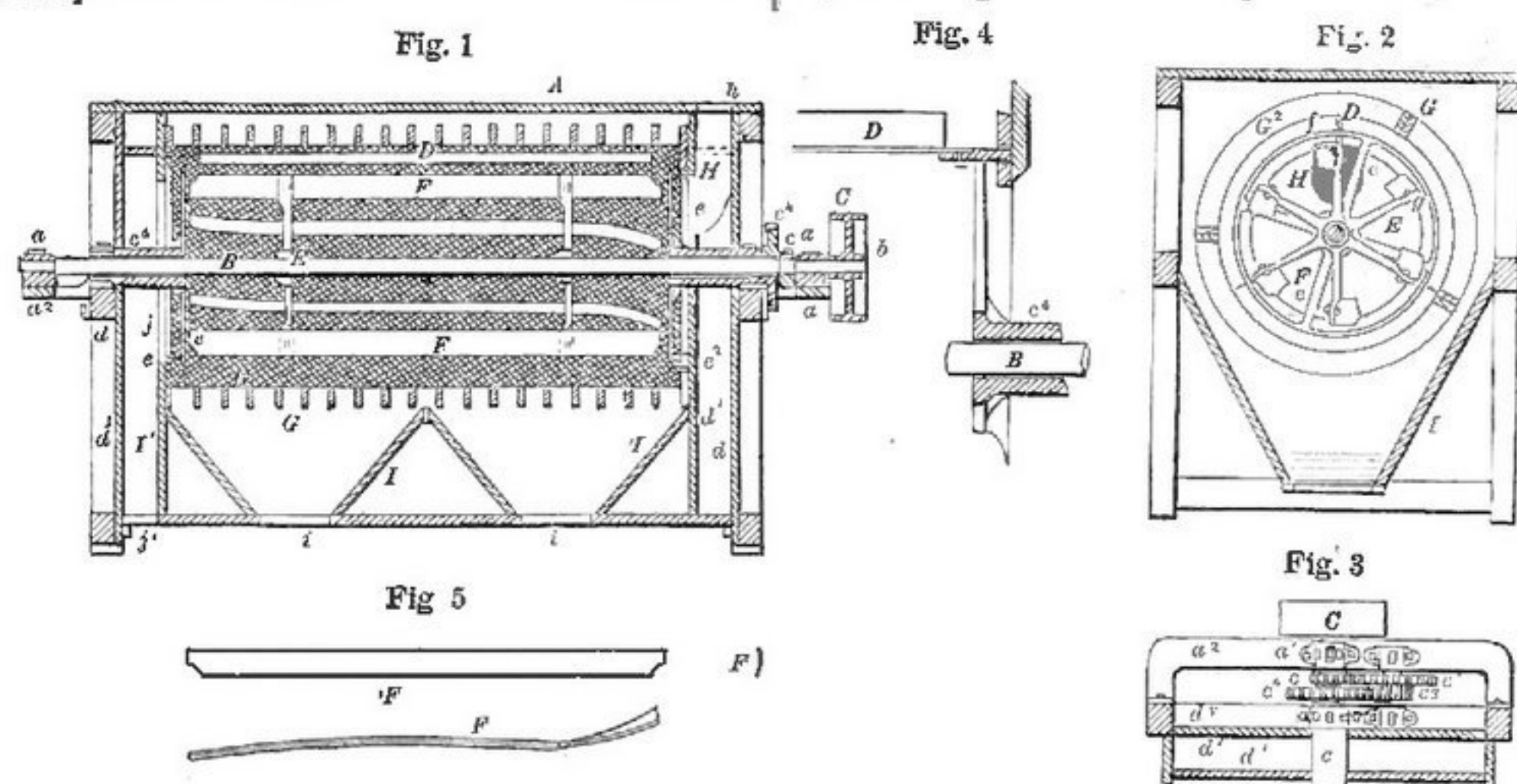
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HUNTLEY & HAMMOND, SOLE IMPORTERS, SILVER CREEK, N. Y.

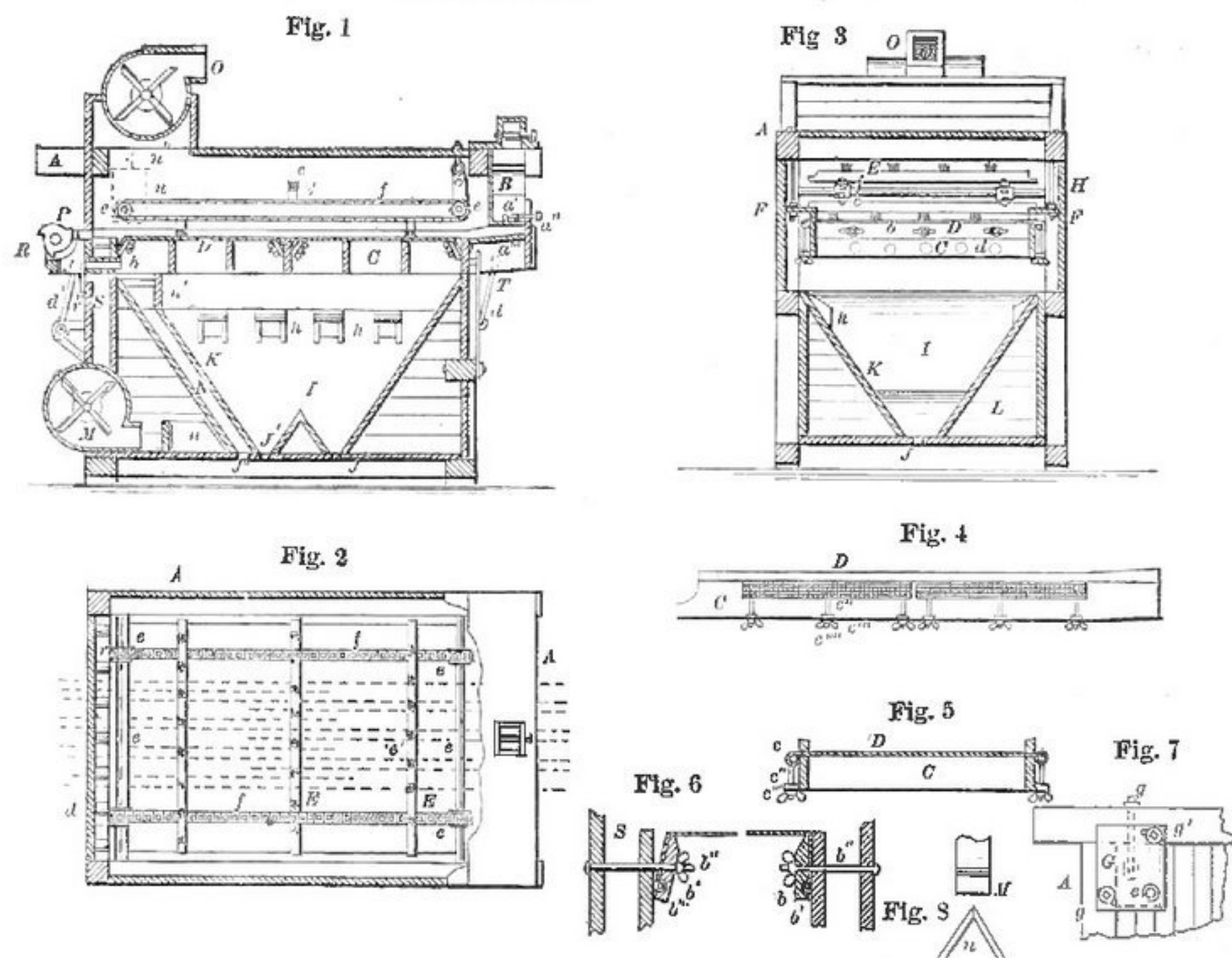
Successors in the Bolting Cloth Trade to Huntley, Holcomb & Heine, Holcomb & Heine and Aug. Heine.

**FLOUR-SIFTING MACHINE.**

Letters Patent No. 296,716, dated April 15, 1884, and issued to Franz Wilhelm Andree, of Chicago, Illinois. This invention relates to an improved flour-sifting machine; and the object in view is to so construct such a machine that the crushed grain will be thoroughly sifted, the coarser and finer particles being separated and discharged through different outlets. Figure 1 is a vertical section of the machine; Fig. 2, an end section on line *x x*, Fig. 1; Fig. 3, a sectional plan view of parts of the machine; Fig. 4, a section showing certain parts on an enlarged scale, and Fig. 5 views in detail of the revolving beaters or agitators. The operation of the device is as follows: Motion is imparted to shaft B and to the arms E'



FLOUR SIFTING MACHINE.



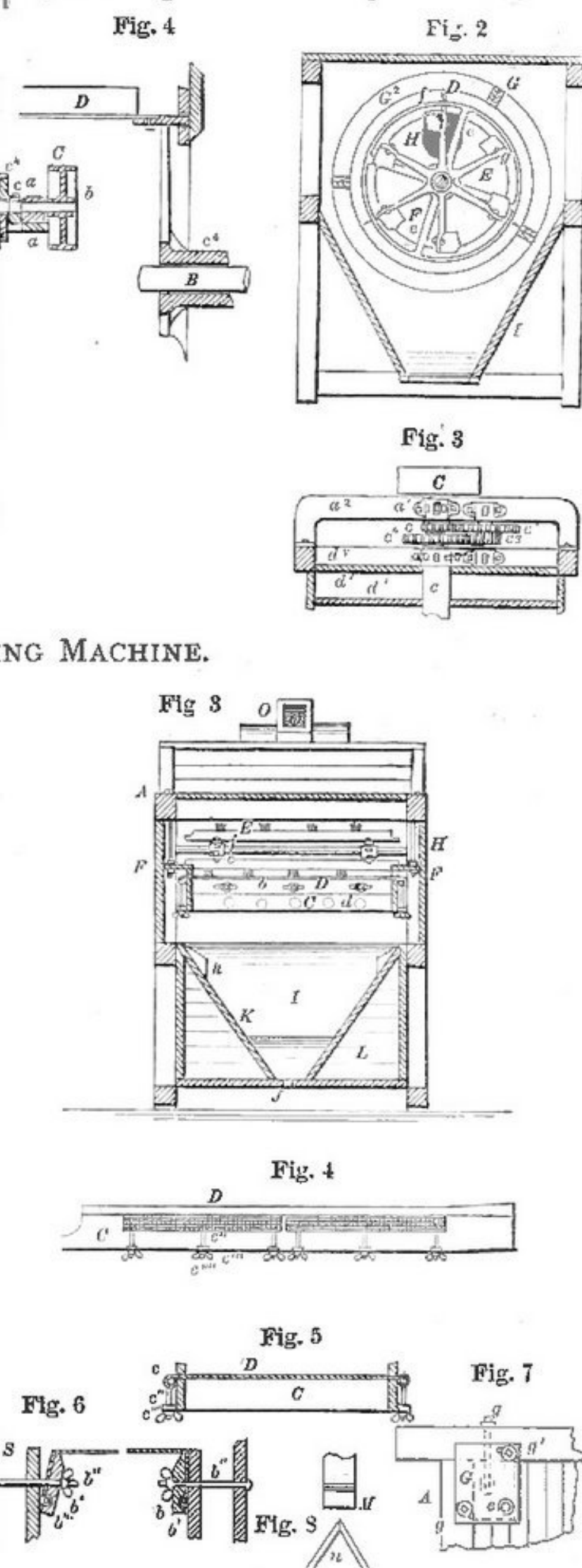
MIDDINGS PURIFIER.

and beaters or strips F, mounted thereon, through the medium of pulley C. This, through the medium of wheel *c*, revolves wheels *c'* and *c''*, which imparts motion to sleeve *c5*, and through it to arms *e*, outer sets of beaters, D, and sleeve *c6*, the wheels referred to being of such relative size that the shaft B and its connections will make three revolutions to each one of sleeves *c5* and *c6* and the parts connected therewith. The crushed grain is then fed through discharge-pipe H to the interior of screen G, and upon entering therein is brought in contact with the inner beaters or strips, F, and outer set of beaters, D, by which it is thoroughly shaken up, the finer particles being separated from the coarser ones, the shape of the strips F, as herein shown, being especially adapted for that purpose. The finer particles are then dropped upon screen G, and are sifted through and guided by boards I to openings *z*, through which they pass to any suitable receptacle. The coarser particles which are too large to pass through the meshes of screen G are gradually carried

to the end of the machine and discharged through opening *j* in upright *d6* into space I', and thence, through opening *j'*, into any suitable receptacle provided therefor.

MIDDINGS PURIFIER.

Letters patent No. 296,752, dated April 15, 1884, issued to Andrew Hunter, Chicago, Illinois. In the drawings, Figure 1 is a longitudinal vertical section of a middlings purifying machine embodying the invention. Fig. 2 is a top view with the casing broken away, showing the arrangement of the sectional brushes and their line of travel. Fig. 3 is a vertical cross-section in the plane of the line *f' f'* of Fig. 1. Fig. 4 is a side elevation of the screen-frame. Fig. 5 is a cross section of the screen-frame, showing the device for tightening the cloth endwise. Fig. 6 is an enlarged view of the clamps for tightening the cloth endwise, showing one clamp closed and the other in position before crossing or bolting to the frame. Fig. 7 shows the arrangements of adjustable box G, and Fig. 8 shows a top view of the wind



spreaders *n* and mouth of fan M. The principal features of this invention consist of a series of interrupted or open brushes having extended ends, which are caused to slide upon bars, placed upon each side of the sieve, in such a manner that the bristles travel on the top of the cloth. The brush being so constructed that its several bunches of bristles travel in separate paths, and at such distances apart as to avoid carrying any portion of the middlings under treatment over the tail of the sieve. A novel device for stretching the cloth and holding it securely tight forms another feature of the invention, as does also a novel arrangement of air-tubes, by which atmospheric disturbance of the tailings as they descend from the sieve is avoided.

WILHELM & BONNER,
Solicitors of Patents,
Attorneys and Counselors in
Patent Causes.
No. 284 Main St., Buffalo, N. Y.

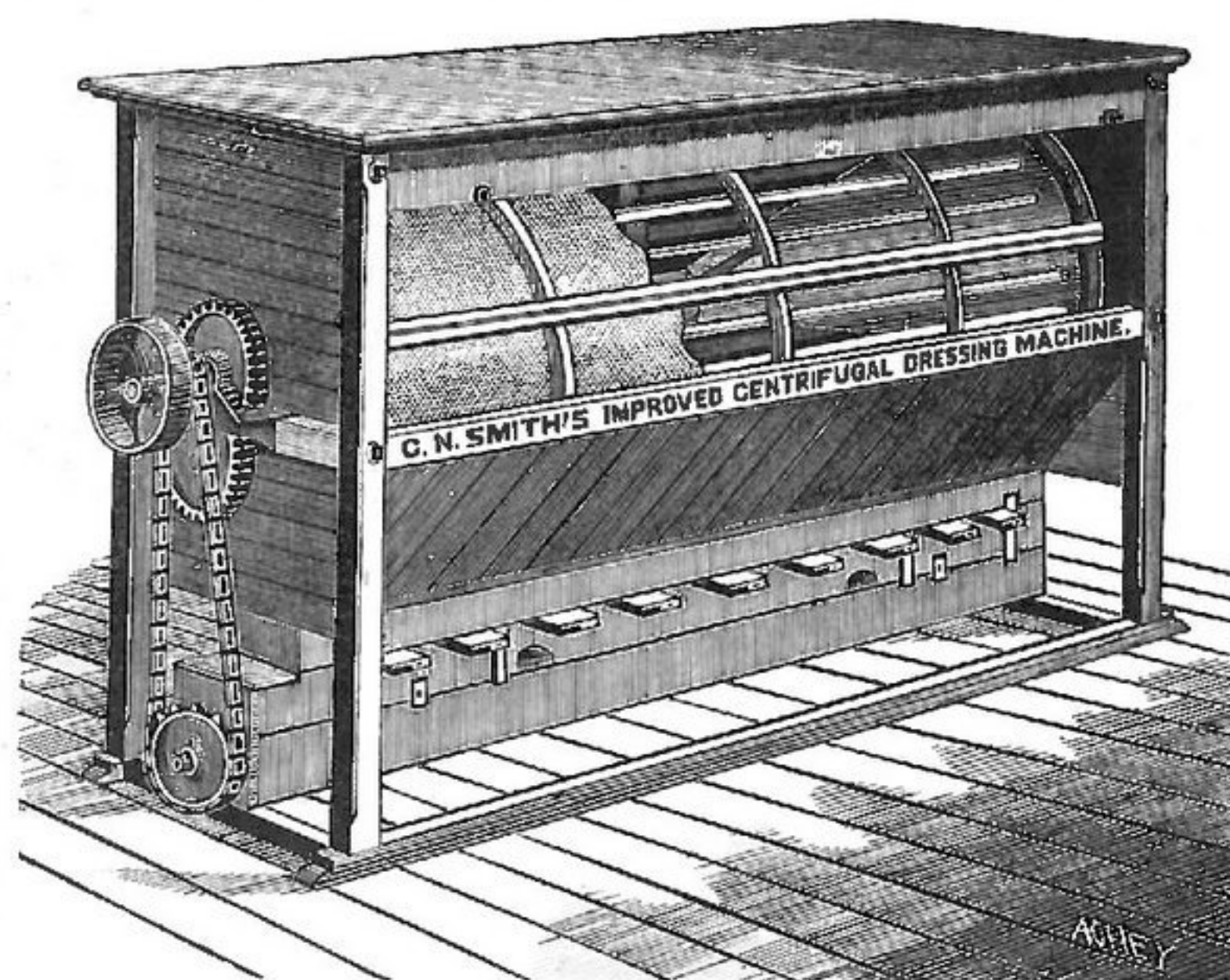
GEO. WALKER & SON, PRACTICAL MILLWRIGHTS AND MANUFACTURERS' AGENTS

Are prepared to make Plans and Specifications for NEW, AND FOR REMODELING OLD MILLS, to any process, and WILL FURNISH MACHINERY best adapted to local and individual circumstances. Will superintend construction, or build by contract, as may be desired.

GEO. WALKER & SON, BOX 222, HAMBURG, ERIE CO., N. Y.

CENTRIFUGAL BOLTS

BEST IN THE MARKET
AND
FOR THE LEAST MONEY.

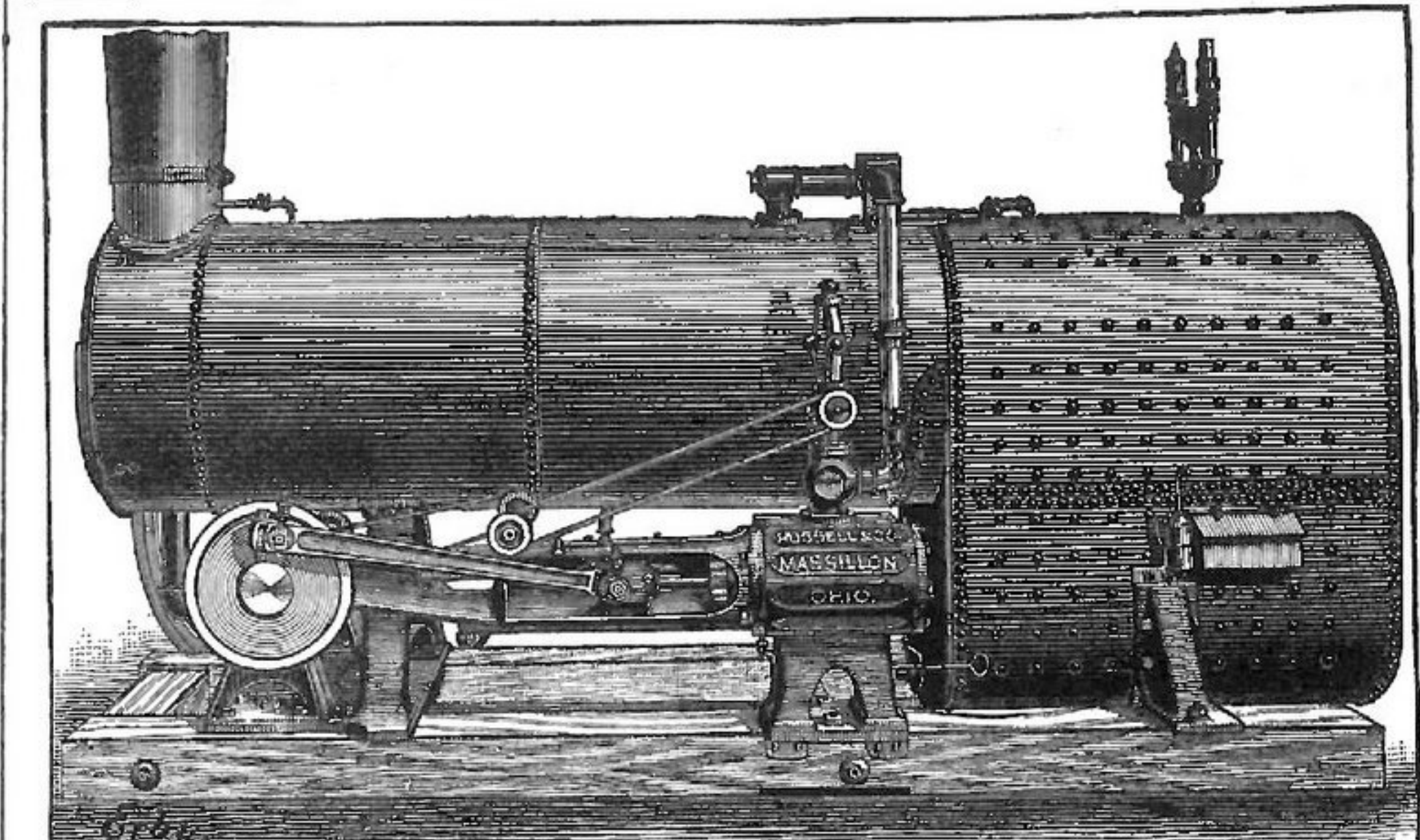


EVERY MACHINE WARRANTED.
Send for Price List and Catalogue.

Read This.

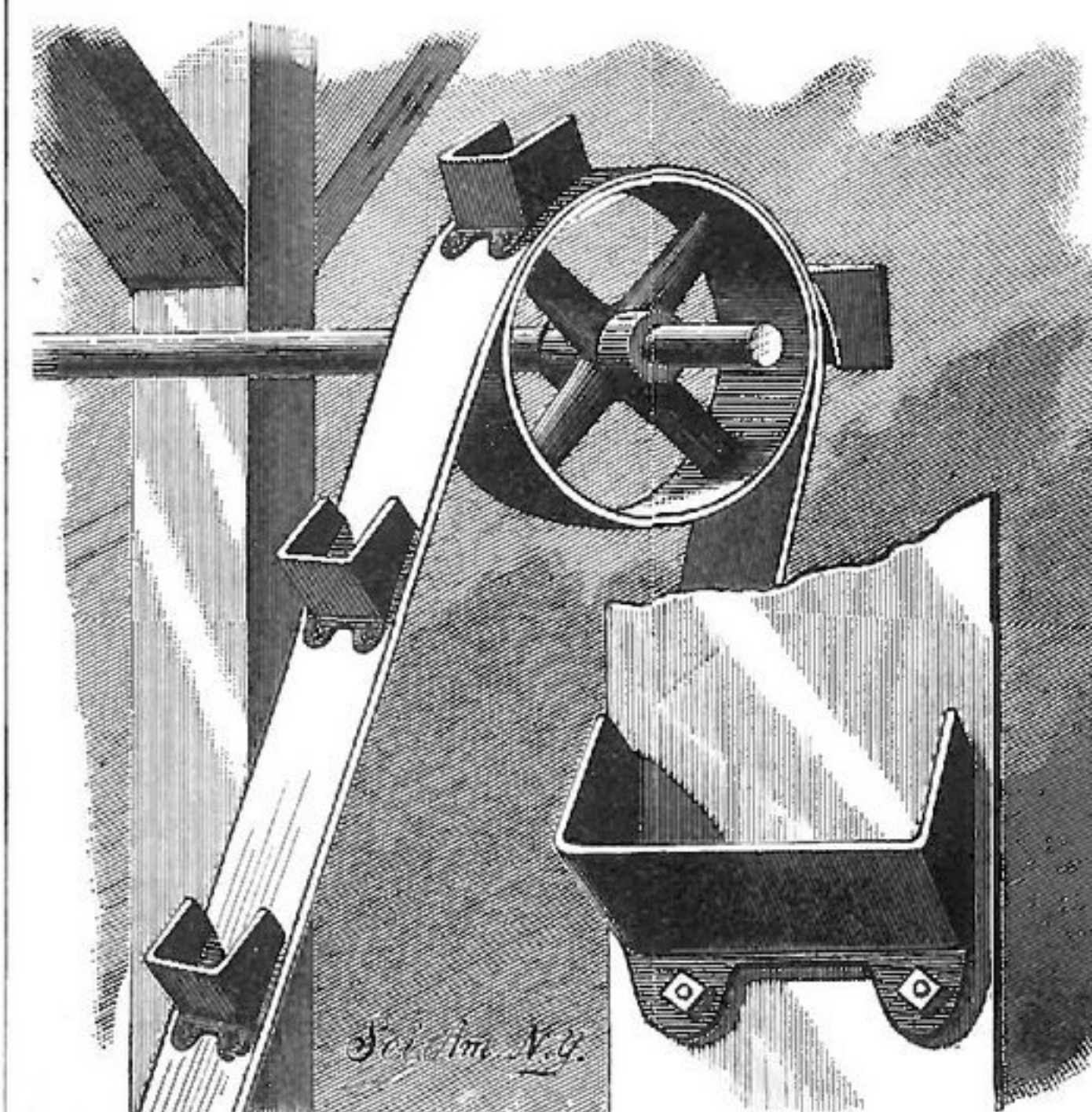
MR. C. N. SMITH, DAYTON, OHIO.
GEO. PRIEST & CO., ILLINOIS CENTRAL ROLLING MILLS.
DECATUR, ILL., May 15, 1883.
Dear Sir: After using your Centrifugal Flour Dressing Machine for about five months, we have no hesitation in saying, we deem it superior to all others. We are running another machine of different make, and deem yours the superior. We cordially recommend your machine, and know parties will do well in putting the same into their mills.
Yours truly,
GEO. PRIEST & CO.

MANUFACTURED BY
C. N. SMITH, DAYTON, O.
MANUFACTURER OF MILL FURNISHINGS.



THE RUSSELL ENGINES. Nine Sizes, Six Styles. More in Preparation.
Everywhere considered to be the STANDARD. New Illustrated Catalogue sent free on application.
Address, naming this paper. **RUSSELL & CO., Massillon, O.**

HOLMES' THREE-SIDED ELEVATOR BUCKETS



Recently patented by JOSEPH A. HOLMES, Greenland, N. H. It excels in Strength, Durability, Simplicity and Cheapness. It is impossible to clog or carry contents around the second time. Can be run on perpendicular belt, and with greater speed than any other Bucket. These Buckets can be seen at Mr. Holmes' Steam Mill on the line of Concord R. R., near Greenland Station; also at his water mill on the road leading from Portsmouth to Exeter, where they have been running with perfect success for six months or more. Mr. Holmes has already three firms manufacturing these Buckets for him, to fill orders that are coming in from all parts of the United States. Orders have been filled in some of the southern states, and the Buckets have given perfect satisfaction, and the same firms have sent in second orders. These Buckets are being placed in the hands of the mill furnishers of New England. Millers will find it to their advantage to order "Holmes' Three-Sided Elevator Buckets."

Send 20 cents in stamps by mail for sample Bucket. Orders may be sent to Mill Furnishers, or to

JOSEPH A. HOLMES, GREENLAND, N. H.
PLEASE MENTION THIS PAPER.

THE GEO. T. SMITH IMPROVED MIDLINGS PURIFIER.

The Geo. T. Smith Purifier was the first successful Sieve Purifier ever used in this or any other country. The demand for it has steadily increased from the day the first machine was started.

ADAPTED TO ALL SYSTEMS OF MILLING. FIFTEEN SIZES, SUITABLE FOR MILLS OF ALL CAPACITIES.
SINGLE, DOUBLE AND ASPIRATOR MACHINES.

IN THE UNITED STATES
ALONE

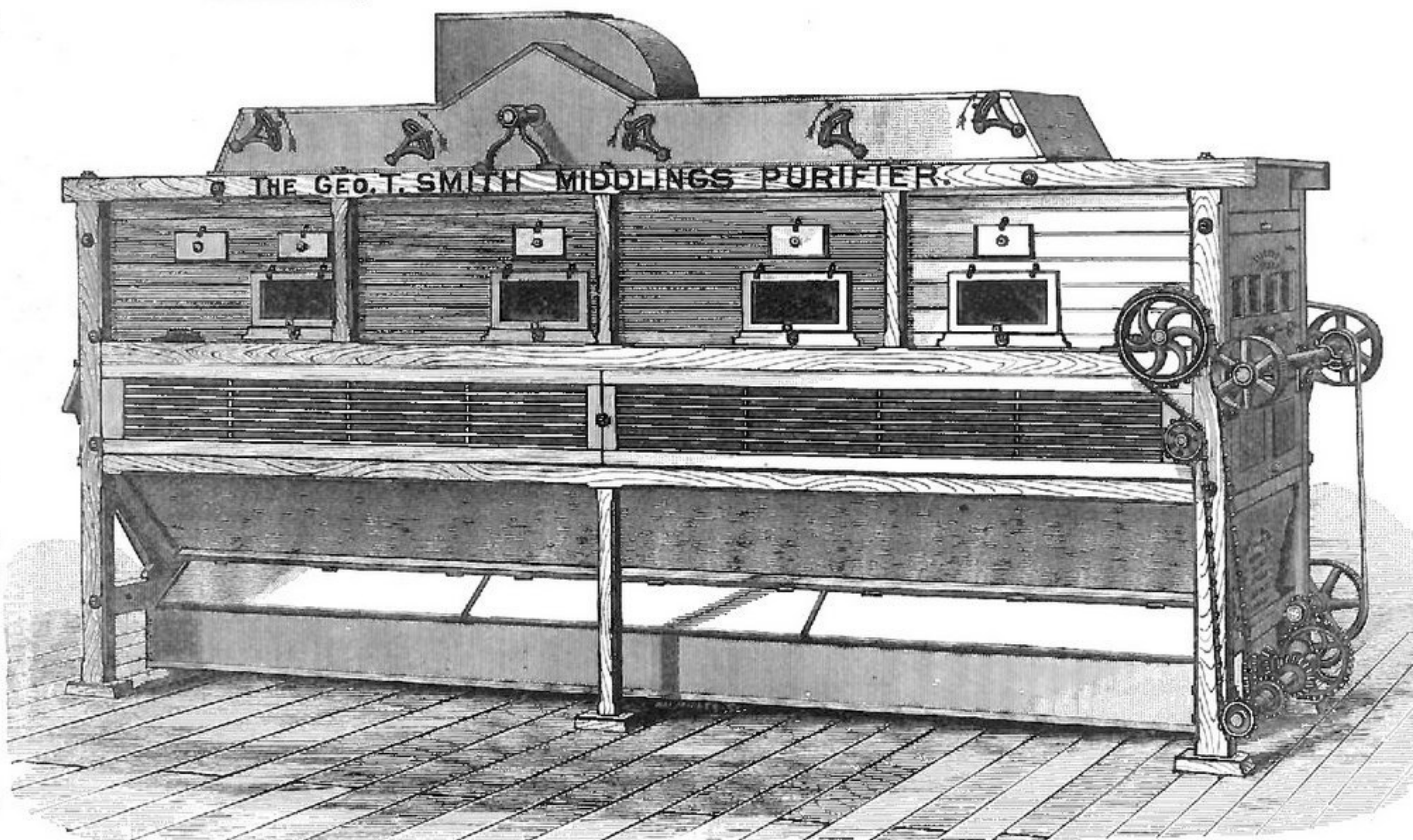
7,000

And More are Now Running.

EXCLUSIVE FEATURES.

Patent Automatic Brush.
Patent Self - Regulating
Feeding Device.
Patent Coil - Spring Ec-
centric Connection.

EASILY ADJUSTED.



IN THE UNITED STATES
ALONE

7,000

And More are Now Running.

EXCLUSIVE FEATURES.

Patented Application of
Graded, Controllable Air
Currents.
Patent Cloth Tightener.
Patent Double Conveyers,
in the Same Horizontal
Plane.

LIGHT RUNNING.

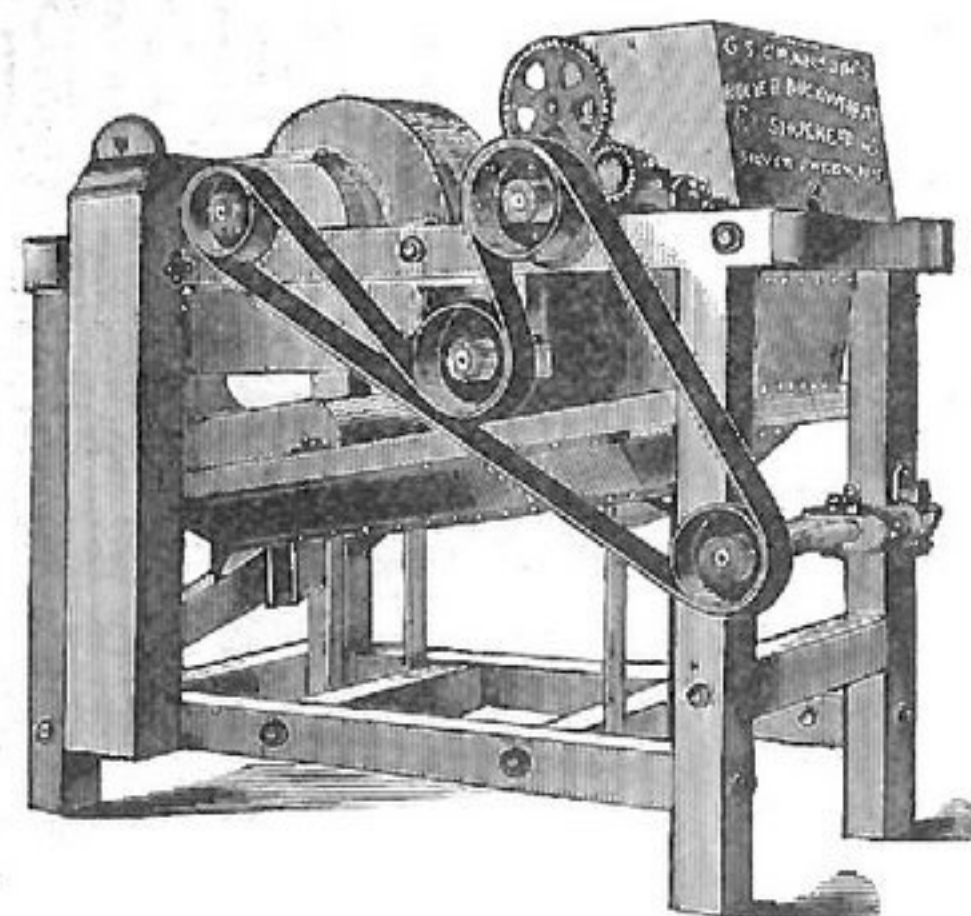
2,500 SOLD IN 1882. The sales for 1883 to date are double what they were for the same months last year. 2,500 SOLD IN 1882.

SPECIAL NOTICE.—We guarantee every owner of a Geo. T. Smith Middlings Purifier absolute immunity from loss by suits for infringement.

We are giving greater attention than ever before to the mechanical details and material used in the construction of our machines, having substituted STEEL SHAFING for iron, and adopted HARD WOOD for frame, and notwithstanding the immense outlay incurred in securing protection under all existing patents, and the cost of constant improvements, our PRICES REMAIN UNCHANGED.

Geo. T. Smith Middlings Purifier Co., Jackson, Mich.

BUCKWHEAT MILLERS



WILL FIND IT TO THEIR DECIDED
ADVANTAGE TO INVESTIGATE THE
CONCEDED MERITS OF

CRANSON'S SILVER CREEK
ROLLER BUCKWHEAT SHUCKER

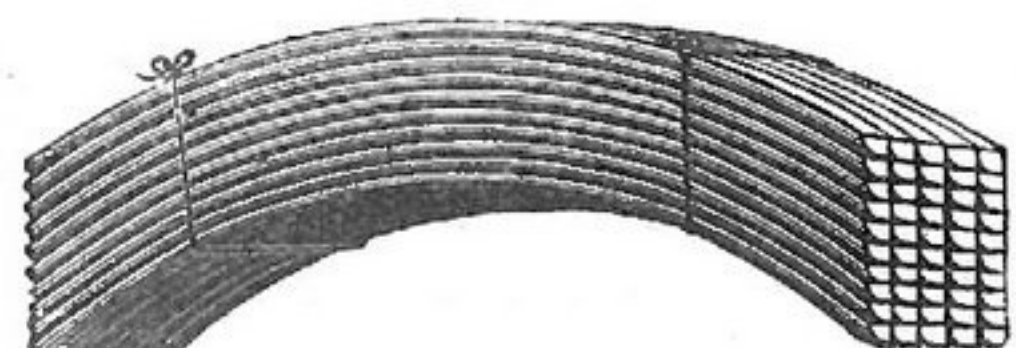
ITS SUCCESS IS BEYOND QUESTION.
ITS VALUE HAS BEEN DEMONSTRAT-
ED IN MORE THAN 800 CASES. IT
IS THE ONLY PERFECT BUCKWHEAT
SHUCKER IN THE WORLD.

G. S. CRANSON & SON, PROPRIETORS SILVER CREEK, N. Y.

MILLS Parties desiring to sell, buy, or lease mill property should not fail to write us. Our List covers various sections of country, and we have mills at all prices, and can offer some decided Bargains in the West.
GILLSON, BENJAMIN & CO.,
97 Metropolitan Block, CHICAGO, and cor. 3d Ave. and 3d Street, MINNEAPOLIS.

HEAD LININGS AND COILED BARREL HOOPS.

Our Celebrated Patent
Head Linings are straight
Rounded on their upper edge
nail on barrel. They will
freely through the square
are packed. We can furnish
from twelve to seventy-two
GOOD Head Lining can



Round Edge Bent Barrel
grained from end to end,
and crimped or bent ready to
not mold, as the air circulates
bundles of 250 in which they
them any desired length,
inches, and as cheap as any
be sold.

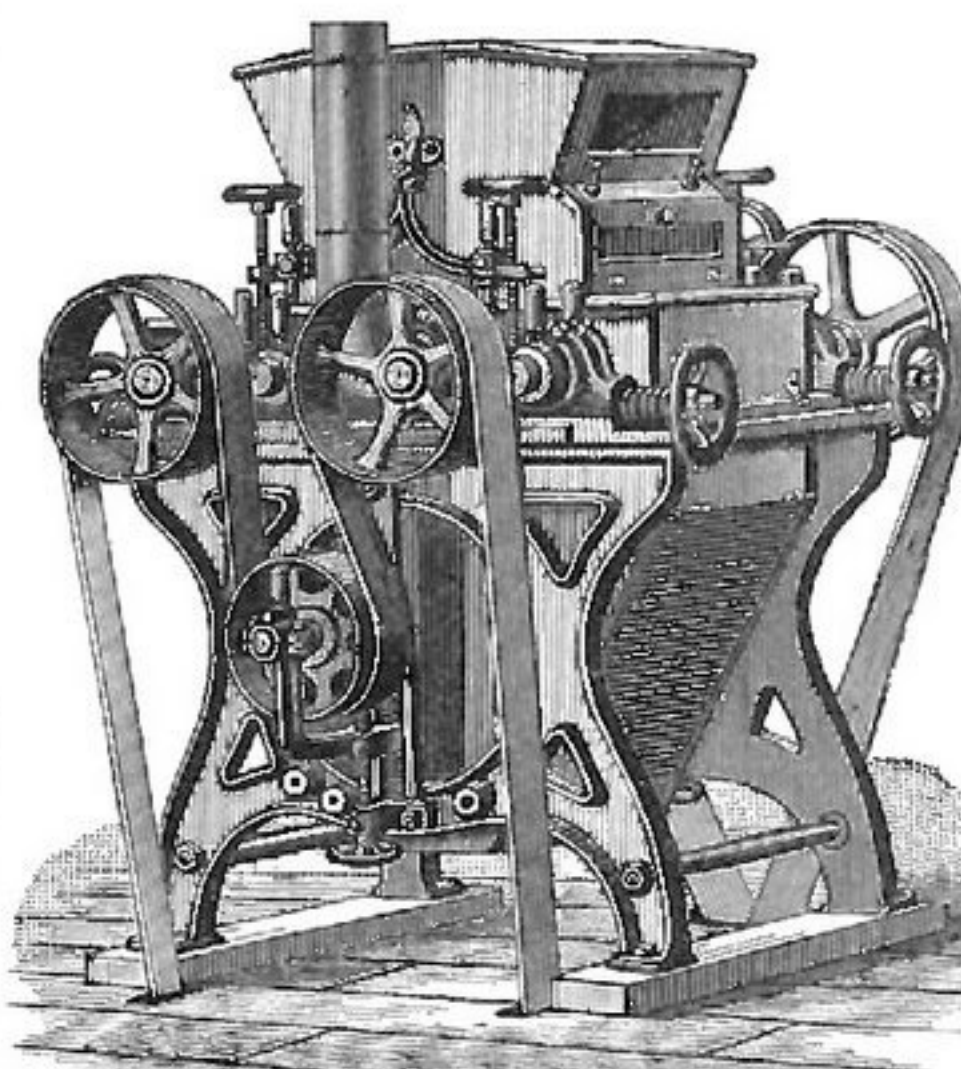
CAN FILL ALL ORDERS AT SIGHT.

REED & SILL COOPERAGE CO.,

DETROIT, MICHIGAN.

THE ORIGINAL SIX-INCH ROLLER MILL.

THE BEST ROLL IN THE MARKET RICKERSON'S PATENT IMPROVED ROLLER MILL.

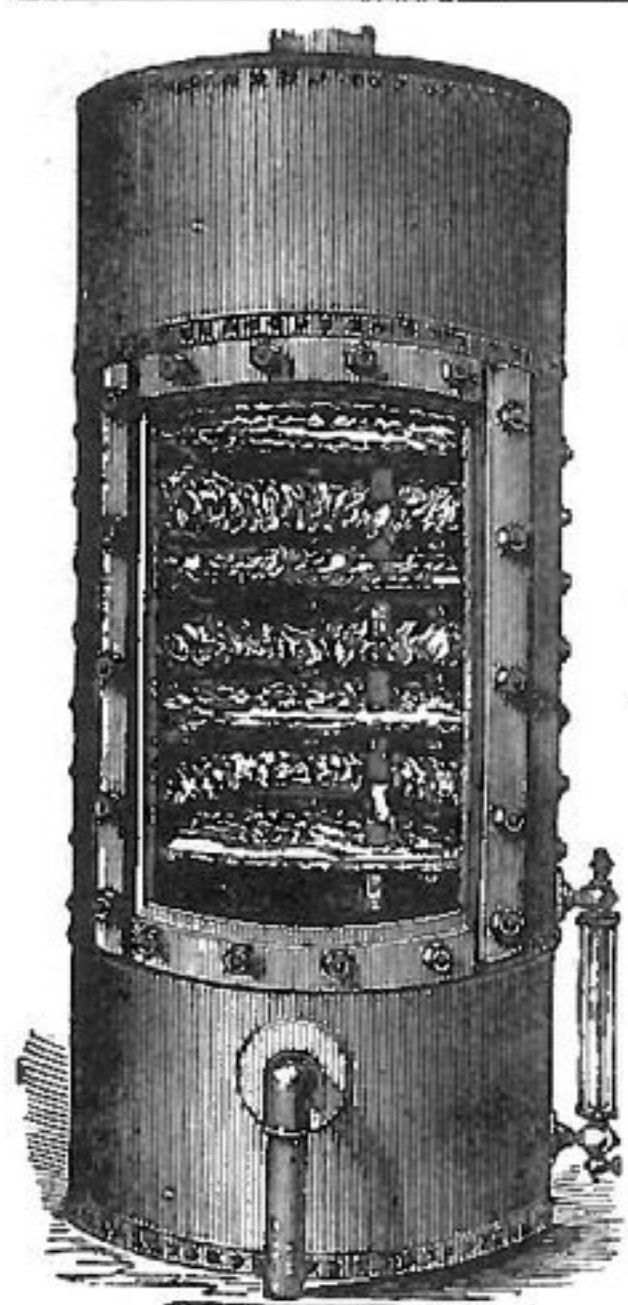


Our six by twenty rolls weigh 175 pounds each, making 700 pounds to drive in a double set roller mill, as against 1800 pounds in the old style mill; this fact enables us to run with greater speed, with no danger of hot journals, hence our greater capacity. Produces better results, because there is less Pulverizing and Better GRANULATION, the point of contact being much less on a SIX-INCH ROLL than the old system; the STOCK BEING KEPT LARGER and more middlings produced on each reduction. It is a well established fact that the object in gradual reduction milling is to make as large a percentage of middlings as possible, and we claim to make MORE MIDLINGS from a bushel of wheat than ANY OTHER ROLLER MILL, and we are prepared to prove our claim. The MORE MIDLINGS the greater percentage of PATENT FLOUR, and better COLOR of ALL grades. We build the only Roller Mill with PATENT EXHAUST ATTACHMENT for taking away all GENERATED HEAT, thus doing away with the GREATEST ANNOYANCE that millers have experienced in running the gradual reduction system, at the same time keeping the stock cooler as it passes

to the Reels and Purifiers, consequently the separations are made more easily. We use nothing but the Ansonia Chilled Iron Roll, with steel journals, ground, and run them entirely with LONG belts. With a feed device for throwing out and in easily, with a leveling device that is positive and perfect, and an adjustment so entirely positive, that feed can be stopped or cut-off, and put on again without readjusting rollers. WE DO NOT DEPEND UPON THE STOCK TO KEEP OUR ROLLS APART. We are prepared to furnish plans for our Gradual Reduction system on short notice, and fill orders for our Mills promptly. We make both Corrugated and Smooth Rolls. Twelve, Fifteen, Eighteen and Twenty Inches Long and Six Inches in Diameter. Prices Sent on Application. Correspondence solicited. Address:

O. E. BROWN MANUFG. CO.

GRAND RAPIDS, MICHIGAN.



STILWELL'S PATENT LIME EXTRACTING HEATER and FILTER COMB'D

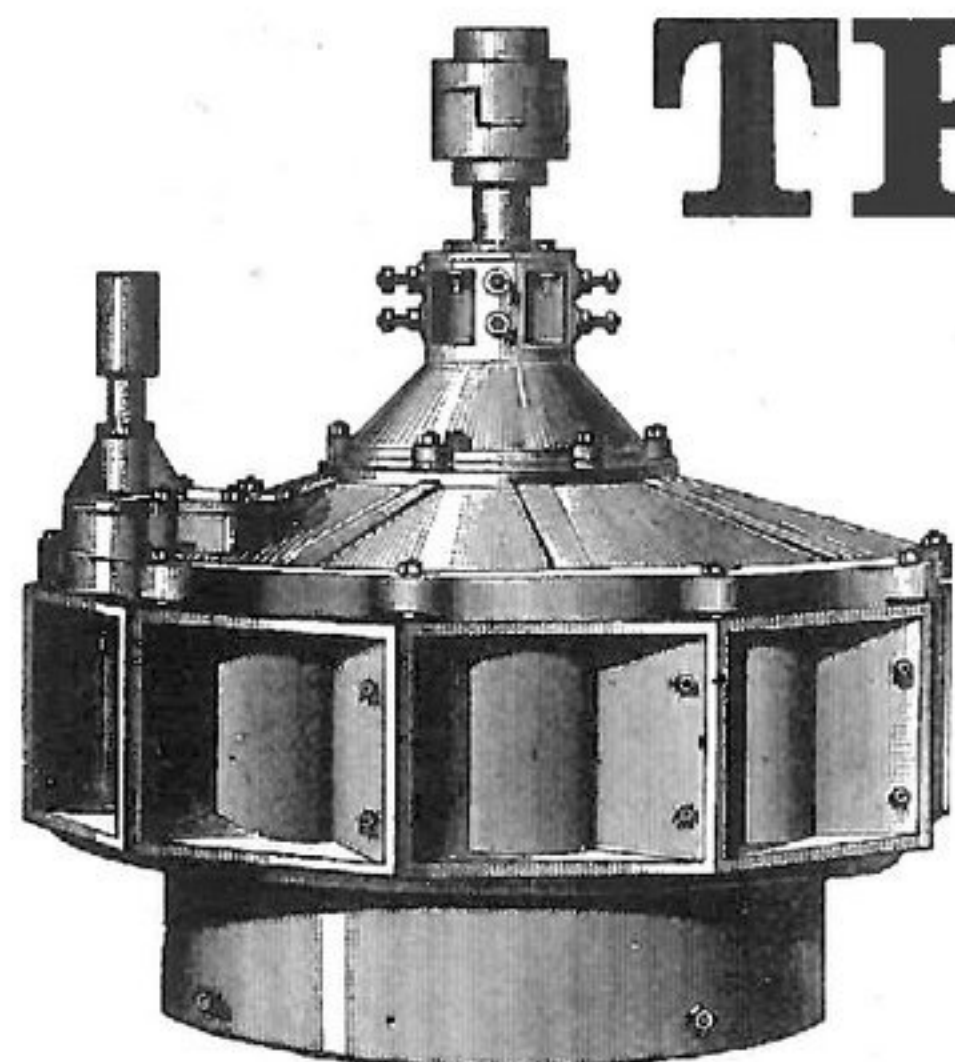
IS THE ONLY LIME EXTRACTING HEATER THAT WILL

Prevent Scale in Steam Boilers, Removing all Impurities from the Water Before it enters the Boiler.

THOROUGHLY TESTED. OVER 3,000 OF THEM IN DAILY USE.

This cut is a fac simile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the heater had been Running two weeks. Illustrated Catalogue Free.

STILWELL & BIERCE MANUF'G. CO., DAYTON, OHIO.



THE EUREKA TURBINE

Celebrated as the Best Part-Gate Wheel Ever Built.

Absolutely Unequalled in Efficiency, as Shown by
The Accompanying Table.

WE PUBLISH OUR PART-GATE FIGURES.

OTHERS SIGNIFICANTLY OMIT THEM.

No Other Turbine Ever Approached the Above Percentages at Part-Gate.
For Catalogue and Information Address,

W. H. BARBER & CO., ENGINEERS AND MACHINISTS, ALLENTOWN, PA., U. S. A.

From the Records of Actual Tests at the Holyoke, Mass., Test-
ing Flume:

PERCENTAGE OF EFFICIENCY.

	Full Gate.	¾ Water.	½ Water.	¼ Water.
24 Inch Wheel.....	.8436	.8416	.8202	.8002
24 Inch Wheel.....	.8206	.7910	.7700	.7008
24 Inch Wheel.....	.8078	.7578	.7275	.6796
30 Inch Wheel.....	.8000	.8011	.7814	.6850

LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

**MOST PERFECT TURBINE
NOW IN USE.**

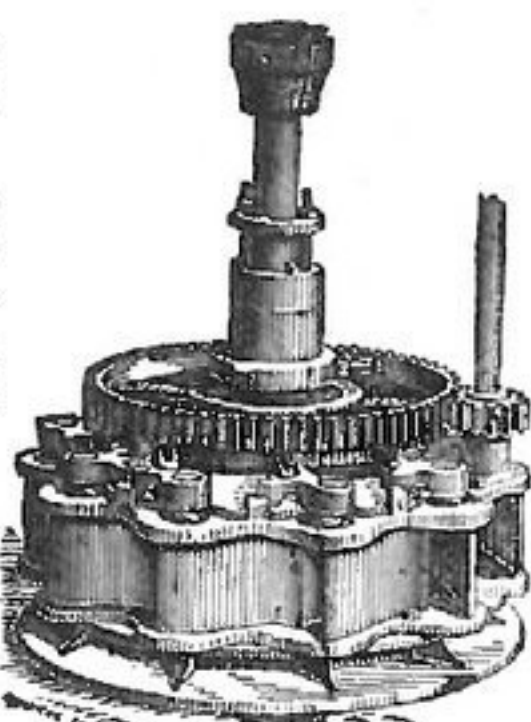
Comprising the Largest and the Smallest Wheels, under both the Highest and
Lowest Heads used in this Country. Our new Illustrated Book sent free to
those owning water power.

Those improving water power should not fail to write us for New Prices
before buying elsewhere. New Shops and New Machinery are provided for
making this wheel. Address

**JAMES LEFFEL & CO., SPRINGFIELD, OHIO, AND
110 LIBERTY STREET, N. Y. CITY.**

The Watertight Turbine

Has the best gate
in existence. Don't
leak. Don't clog.
Guaranteed to give
better part gate re-
sults than any oth-
er wheel. Investi-
gate the claims of
this wheel before
purchasing. Sales
steadily increasing.
Send for new illus-
trated catalogue
out.



WM. BARTLEY & SONS, BARTLEYVILLE, N. J.



The CUMMER ENGINE

Was awarded the gold medal at the
Cincinnati Exposition and a special
prize for extraordinary merit, also the
highest medal at Louisville for the
best Automatic Engine. Send for
150-page catalogue No. 9. Address,

The Cummer Engine Co., Cleveland, O.



PORTABLE FORGES

Empire Portable Forge Co.
Cohoes, N. Y.
Send for Catalogue.

POOLE & HUNT'S LEFFEL TURBINE WATER WHEEL

Made of Best Materials, and in the Best Style of Workmanship.

MACHINE-MOLDED MILL GEARING

From 1 to 20 feet diameter, of any desired face or pitch, moulded by
our own Special Machinery.

SHAFTING, PULLEYS AND HANGERS

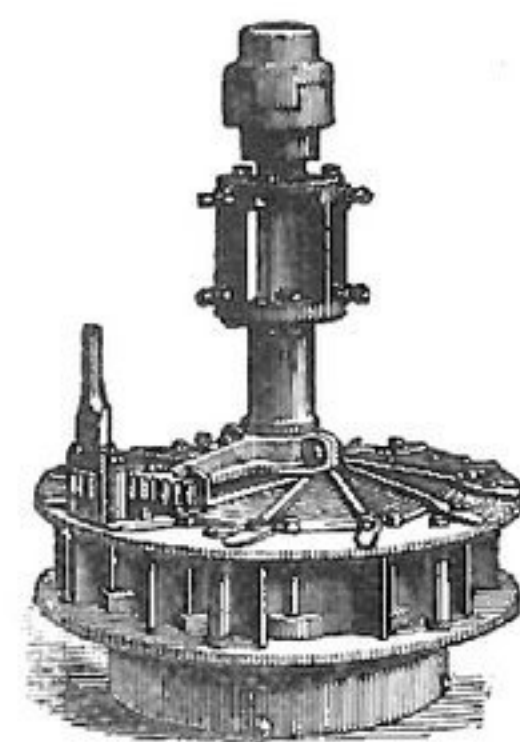
Of the Latest and Most Improved Designs.

Engines, Boilers,

Mixers and General Outfit for Fertilizer Works.

Special Attention given to Heavy Gearing. Shipping Facilities the
Best in All Directions.

POOLE & HUNT, BALTIMORE, MD.



OBENCHAIN'S IMPROVED Little Giant Turbine Water Wheel.

Is the most Practical and Durable Wheel made, and is the
Best Partial Gate Wheel on the market.

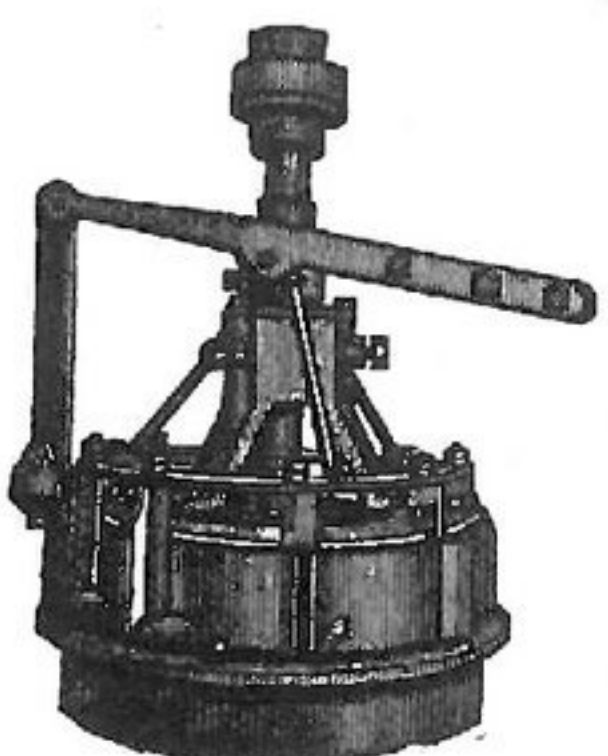
Capacity Increased, and Prices Largely Reduced.

We sell Wheels for less money per Horse Power than
any other manufacturer.

SEND FOR NEW ILLUSTRATED WHEEL BOOK.

MANUFACTURED BY

**KNOWLTON & DOLAN,
LOGANSPOUT, IND.**



Obenchain's Automatic Grinding Mill

Is Self-Regulating, and will continue to grind just as it is set, and the ex-
pansion and contraction of the spindle have no effect upon its grinding.
It is always in perfect trim when grinding, as it is absolutely a self-trimmer.
An obstruction entering this mill, the stones will part just enough to allow
it to pass through, and immediately adjust themselves and grind the same as
before obstructions entered.

IT WILL GRIND MIDDINGS

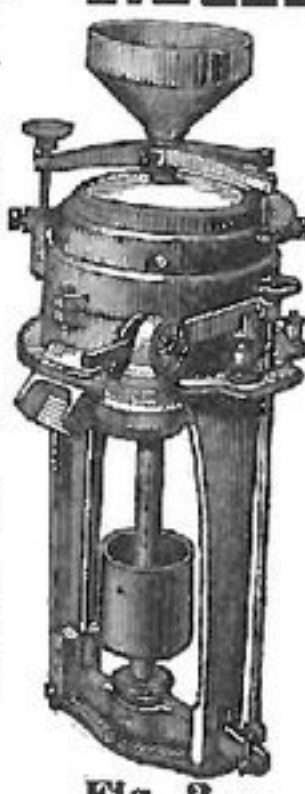
as slow as 10 pounds per hour, or as fast as 600, according to speed and pressure
given, and cannot be excelled for grinding wheat or corn.

We make four sizes of these mills, 14, 20, 25 and 30 inches, all of the best
quality of Old Stock French Burrs, set in solid iron frames. Cut No. 1 repre-
sents this mill as made to set upon mill floor. Cut No. 2 is our Hanger Mill,
and it is intended that hanger and pulley pass down through the husk floor to
be driven from any mill spindle or upright shaft. With these mills we make a
specialty of constructing New Process custom and merchant mills at a low figure.

Fig. 1.

ILLUSTRATED PAMPHLET, GIVING FULL DESCRIPTION AND PRICE,
SENT ON APPLICATION TO

KNOWLTON & DOLAN, SOLE MANUFACTURERS, LOGANSPOUT, IND.





Notes from the Mills.

Rogers Bros., Bristol, Pa., have bought a Gray's noiseless belt roller mill.

Keil & Long, New Haven, Pa., have put in six pair of Allis rolls in Gray's noiseless belt frames.

Two elevators of 50,000 bushels capacity each will be built at Devil's Lake, Minn., this summer.

Slater Mill Co., Blanchester, Ohio, have bought seven pair of Allis rolls in Gray's noiseless belt frames.

In Mexico, we are told, flour is \$20 a barrel, corn \$2 a bushel, beans \$2 a bushel, and potatoes \$3 a bushel.

Parkin & Co., Kellerville, Ill., are putting in a No. 3 single purifier, furnished by the Case Mfg. Co., Columbus, O.

D. Lowrie & Son, Rochester Depot, O., have ordered one No. 1 single purifier, from the Case Mfg. Co., Columbus, O.

Thos. Bradford & Co., Cincinnati, O., have ordered one "Little Giant" break machine from the Case Mfg. Co., Columbus, O.

J. S. Collins, Elk Creek, Wis., has placed his order with the Case Mfg. Co., of Columbus, O., for a "Little Giant" break machine.

Geo. V. Hecker & Co., New York City, have bought thirteen pair of porcelain rolls in Gray's noiseless belt frames, from E. P. Allis & Co.

Work on the new mill of Eckhart & Swan, at Chicago, being built by E. P. Allis & Co., is progressing favorably, and will soon be finished.

The Case Mfg. Co., Columbus, O., have lately received an order from John Cooper, Cochran's Mill, Pa., for breaks, rolls and centrifugal reels.

The Case Mfg. Co., Columbus, O., have an order through their agents, Wm. E. Catlin & Co., Chicago, Ill., for one "Little Giant" break machine.

The Case Mfg. Co., Columbus, O., have lately shipped two pair rolls with patent automatic feed to the W. A. Huffman Implement Co., Fort Worth, Tex.

At Wilson, Kan., April 21, the new stone flouring mill, owned by Lang & Co., was destroyed by fire, together with 2,000 bushels of wheat and 4,000 barrels of flour. Total loss, \$30,000.

A dispatch from Wilson, Kan., says the new stone flouring mill at that place, owned by Lang & Co., was destroyed by fire late last week. Total loss, \$30,000; insurance, \$12,000.

The Waterford mills, Waterford, Pa., have just added a large 50-horse power boiler to their grist mill. This will give them ample capacity to meet the demands of their customers.

The Valley Grain Elevator Co., of St. Clair county, Ill., with capital stock of \$260,000 obtained a license to open books of subscription last month.

The Toledo & Michigan Elevator Co., at Toledo, O., has filed articles of incorporation with the Secretary of State. The capital stock is \$250,000.

Clay County Milling Co., of Liberty, Mo., have placed their contract with E. P. Allis & Co., for a complete roller plant for their mill, and will use ten pair of the celebrated Allis rolls, in Gray's noiseless belt frames.

The new mill of E. P. White Milling Co., at Leavenworth, has recently started up, and is doing very fine work. Everything started up without a single hitch, speaking well for E. P. Allis & Co., who planned and built the mill.

The Eagle Mill at Belleville, Ont., started up on April 17, but broke down the following afternoon, owing to some defect in the engine. The necessary repairs were at once ordered, and the machinery was again in motion the next day.

Johnson & Denton, Elm Mills, Kas., visited Milwaukee recently, and placed an order with Allis & Co., for a complete outfit for their mill, including a four-break reduction machine, and four pair of Allis rolls in Gray's noiseless belt frames.

Eagle Mill Co., McPherson, Kan. have contracted with E. P. Allis & Co., for a No. 2 four-break reduction machine, six pair of Allis roll, in Gray's noiseless belt frames, 12x30 Reynolds Corliss engine, in fact, a complete outfit for a new mill.

The flour milling interests of the south are steadily increasing, and it now looks as though in a few years the southern people would be able to supply themselves with flour instead of being so

largely dependent upon the northwest as they are at present.

The contract of W. A. & R. P. Crowder, Hopeville Springs, Tenn., for a complete outfit of breaks, rolls, purifier, centrifugals, scalpers, has been awarded to the Case Mfg. Co., Columbus, O. Nine pairs of rolls in connection with their three roll break machine will be used with the purifiers, centrifugals, etc.

The grist mill at Maple Rapids, Mich., was shut down a few days since. Mr. Creasinger claiming that it was not paying expenses. But arrangements have been made whereby it will run after this week, at least on certain days in each week. The mill has been doing excellent work lately and it is hoped that it can be kept running steadily.

The grain elevator of Smith, Hippen & Co., in Pekin, Ill., was discovered to be on fire April 27. A strong south wind prevailed. The flames soon enveloped the Hudnut grain warehouse on the north, destroying both, with their contents. The elevators were only partially filled with grain. Loss on buildings and grain, \$60,000; insurance not stated.

The Union Improvement Elevator Co., owners of Elevator "A," Duluth, Minn., are making arrangements for another large elevator, with a capacity of 1,100,000 bushels, at Rice's Point. The work has been commenced, and when complete it will cost about \$400,000. Some \$10,000 to \$15,000 are also to be expended in improving elevators "A," "B" and "C" of that city.

The LaGrange Mill Company, Red Wing, Minn., under the management of the new firm of H. E. Perkins & Co., seems to have struck trade in the most satisfactory manner. A new miller, formerly of Milwaukee, has been employed as head miller. An order for a thousand barrels of flour was received from Washington, D. C., the other day, and orders are coming in rapidly from other directions.

The Lake Superior Elevator Co. has a large force of men at work preparing the foundations for their third elevator at Duluth, Minn., which is to be erected west of elevator "C." The new house will have a capacity of 1,100,000 bushels of wheat, and when completed will cost \$400,000; it will be one of the largest and best elevators on the chain of lakes, and be supplied with all the modern improvements.

H. D. Rush, of Leavenworth, Kan., who has been in the milling business at that point for some years, has had under contemplation, the erection of a fine 600-barrel roller mill for some time. The matter has taken definite shape, by the awarding of the entire contract to Nordyke & Marmon Co., of Indianapolis, Ind., on the 23rd ult. The contract was severely contested for by leading mill-furnishing establishments and Nordyke & Marmon Co. have, by the securing of this contract, a galaxy of fine flouring mills all built within the last year and situated in the adjoining cities of St. Joe, Atchison and Aulville.

The Fergus Falls, Minn., *Journal* says: The Fergus Flour Mill Co. will double the size and capacity of their mill, which is a very encouraging sign for the milling industry of the city. This mill has been very successful in the past, and the sagacious stockholders are willing to do twice as much business on the same terms. The Wright water power, in the center of the city will be improved by tearing away the old saw mill and by erecting extensive and most permanent flumes, under the immediate direction of Mr. G. M. Estabrook, the eminent water-power-manipulator, who has his work already begun, and will "move on the enemy" as soon as the ice drops out of the pond. The Minneapolis syndicate, who own the so-called "Austin power" have also engaged Mr. Estabrook to raise and otherwise improve their dam the coming season. This splendid power will probably be raised four feet, giving 20 feet head. New flumes, we believe are also to go in on the east side, and nobody would be in the least surprised if a large flour mill should go up. Mayor Page has his plans well matured for building a large flouring mill on his power a mile above the city limits, at present the finest improved power anywhere on the Red river. This mill will of itself constitute a large addition to the milling capacity of Fergus Falls and at the same time will be a new departure in this branch of manufacture in that it is the first mill to be built on the Black Hills road. The well-known character of Mr. Page for safe and judicious investments gives great confidence to this and other projects looking to the increase of flour manufacture at this point.

The Mill Furnishing Trade.

JOSEPH A. HOLMES, of Greenland, N. H., has an advertisement in another column, of his Three-sided Elevator Buckets to which the reader's at-

tention is directed. These buckets are a decided novelty, and for them Mr. Holmes claims a number of advantages which certainly entitle them to investigation.

THE CASE MFG. Co., of Columbus, O., have recently taken out thirteen patents on mill machinery and processes of making flour. The inventions cover broadly the "Vibratory Automatic Feed" on rolls, which is regarded as a remarkably perfect device. They also cover in one of their patents a machine for splitting the wheat and separating the germ, seam dirt and broken wheat, all combined in one machine. These patents will, we understand, form the basis for extensive litigation without doubt, as some of them cover broadly machines built by others besides the Case Mfg. Co.

OUR MINNEAPOLIS LETTER.

[From our own correspondent.]

THE SITUATION NOT ENTIRELY SATISFACTORY—THE MILLERS RUNNING LARGELY ON ORDERS—SOME PRETTY SIZEABLE PROFITS—TWO BIG WEEKS RUN—FLOUR IN GOOD DEMAND BUT PRICES NOT SATISFACTORY—AN ACTIVE WHEAT MARKET—THE UNION MILL IN THE HANDS OF A RECEIVER—THE COOPERS INDULGE IN A STRIKE—GOSSIP OF THE PLATFORM—NOTES, ETC.

This seems really an off year for milling, at least it has thus far been very much less favorable than 1883. Up to date, while our millers, as a rule, may have made a small margin on their flour most of the time, the profits are meagre and do not promise to loom up at the close of the crop year as they did last September. For three to four months after the crop of 1883 had been harvested, there was a good market for flour and the profits ranged from 50 cents to \$1 per barrel. The mills, without very many exceptions, were enabled to roll up quite respectable bank accounts. One firm's profits were variously estimated at from \$400,000 to \$600,000. But this year it has been close work from the start, it being doubtful that some have done any more than keep even in the game. The low level to which wheat sunk some weeks ago, was unlooked for by the miller here, and as he had prepared for something quite different, it did not catch him in very good shape. He expected the usual high price for wheat, and, reasoning that "wheat was cheap at a dollar," loaded up. With storage and interest added this wheat has cost him considerably more than he can sell it for, and he is a determined bull. Higher prices meaning big money to him. With prices slow to advance, he has not been very exuberant in spirits for some time. There is one feature to the situation, however, which has been in favor of the millers, and could not, so far, have allowed them to fare very badly. Nearly every mill in the city sold largely ahead during the winter, and many of them are yet grinding on these orders, which must have netted some profit, as they were made at prices to conform with much higher values for wheat. Our millers feel somewhat encouraged at the slow but gradual advance which wheat has taken of late, and pray that the good work may go on. But flour does not show very much susceptibility to the upward tendency of wheat, and this grieves the miller again.

The mills continue to turn out a large amount of flour, notwithstanding that much has been said about their being forced to shut down on account of the dullness of the flour trade. That the production, however, is kept up so well is probably due to the fact that some of the mills have yet old orders uncompleted, being at work on them at the present time, and then, a mill with a well-established trade is not going to shut down and let any of it get away, even if there is no money in running.

The past two weeks have been the banner weeks for flour production, averaging over 18,000 barrels per day, which is the biggest work done since last fall. From fourteen to sixteen mills have been kept in operation, the most of them running to about three-quarters capacity. The three Washburn mills, for some reason, presumably to fill orders by a certain time, have been crowded to their utmost capacity, turning out over 6,000 barrels per day. The Pillsbury mills, which have about the same capacity, have been taking it much easier.

The eastern demand for flour is reported active, but it is at prices which millers are slow to accept, and with manufacturer and dealer at variance in their views as to values, the volume of business done is not large. Millers say that they would rather close their mills and hold their wheat than accept lower prices than they are asking, and a largely curtailed production may not be a thing very far off. Several mills were shut down last week, but there were nearly

enough others that resumed work to counterbalance the capacity stopped.

The local wheat market has been more active, with higher grades scarce and in considerable demand by outside millers and others. The opinion is evidently gaining ground that there will not be enough good milling wheat to go round, and that kind of an article is being firmly held for better prices. Outside mills cannot get what wheat they want, even at Minneapolis prices. The receipts are becoming lighter, and what there are mainly belongs to the Millers' Association. The stock in store here has fallen off from 2,489,000 bushels two weeks ago, to 2,350,000 bushels at this date, and at St. Paul from 1,020,000 to 960,000 bushels.

Business was quite active on 'Change yesterday, and prices were generally stronger. There was a good demand from state mills, while some local millers sent in some orders. No. 1 hard was offered sparingly, but 5,000 bushels May sold for \$1.04. No. 2 hard opened at \$1 for spot, but closed at 99½¢@99¾¢. Holders of good wheat were not anxious to sell at the market price, in many cases insisting on an advance.

The receipts and shipments here for two weeks are shown in the appended table.

FLOUR.			
	Receipts.	Shipments.	
	Bus.	Bus.	
April 15,	4,000	94,313	
" 22,	3,255	107,805	
Total	7,225	202,118	

WHEAT.			
	Receipts.	Shipments.	
	Bus.	Bus.	
April 15,	516,000	44,500	
" 22,	311,500	46,500	
Total	827,500	91,000	

Owing to some difficulty between partners, the Union Mill, owned by G. W. Goodrich & Co., has been placed in the hands of a receiver and shut down until the affairs of the owners can be straightened out. G. W. Goodrich was the managing member of the firm, and LaFayette Woodward the Co. Mr. Woodward is the monied man, and it was on his application that the receiver was appointed. The mill is of 300 barrels capacity on the roller system, and is estimated to be worth \$60,000. It has evidently made no money for its owners for two or three years, but there seems to be other causes at the bottom of the present trouble. Mr. Woodward does not know whether he will operate the mill or not, but he has ample capital to do so if he likes.

The journeymen coopers are out on one of their periodical strikes. The bosses, having to sell ten hoop barrels at 38¢ to 41¢, notified their men that they could pay only 7, 10 and 16½ cents for making barrels, a cut of 1 to 1½ all round. The coopers refused to accept this, and struck. There are about 300 journeymen in the city, outside of the co-operative shops, and at first some of the men were weak kneed, quite a number going to work at the reduction; but the strikers finally prevailed on the greater portion to join their ranks and the strike has become quite formidable. As the mills are running pretty strong, and there is not a very large stock of stored barrels in the city, the strike, if protracted, may cause our millers trouble. The co-operative coopers, of whom there are about 400, are not permitted by their constitution to strike, and this simplifies the situation to some extent, as they, while usually sympathizing with the strikers, can be depended on for a large number of barrels. The journeymen coopers are wonderfully successful here, and it would not cause much surprise to see them come out ahead in the present fight.

The formal opening of the new chamber of commerce building will be made the occasion of a grand banquet, at which about 600 people will be present. It will occur about the middle of May.

The head millers have once more begun to talk about their annual excursion, and will probably begin to make preparations for it very soon. It will probably occur some time in June.

Geo. Haford goes back to California to take charge of a 250 barrel full roller mill, which is being built by Jack Cross, at Hollister, that state.

Jas. McDaniels, head miller of the Washburn, had the fingers of his left hand pretty badly cut up by sticking them into an iron conveyer.

Captain Shuler, lately of the firm of Shuler & Co., has been appointed agent in this city for the Smith Middlings Purifier Co.

John Kerner, the Red Wing head miller, is traveling for Kirk & Fender, and makes his headquarters at St. Louis.

N. Coplin, head miller of a mill at Cannon Falls, Minn., has gone to California for the benefit of his health.

The Wiegand belt drive is being put on a number of rolls in the Anchor mill, being substituted for gears.

The transit question has finally been settled to the satisfaction of the Chamber of Commerce.

Minneapolis, April 26, 1884. CALEB.



PROVED BY TWO YEARS CONSTANT USE.

GRAY'S PATENT

4-BREAK-4

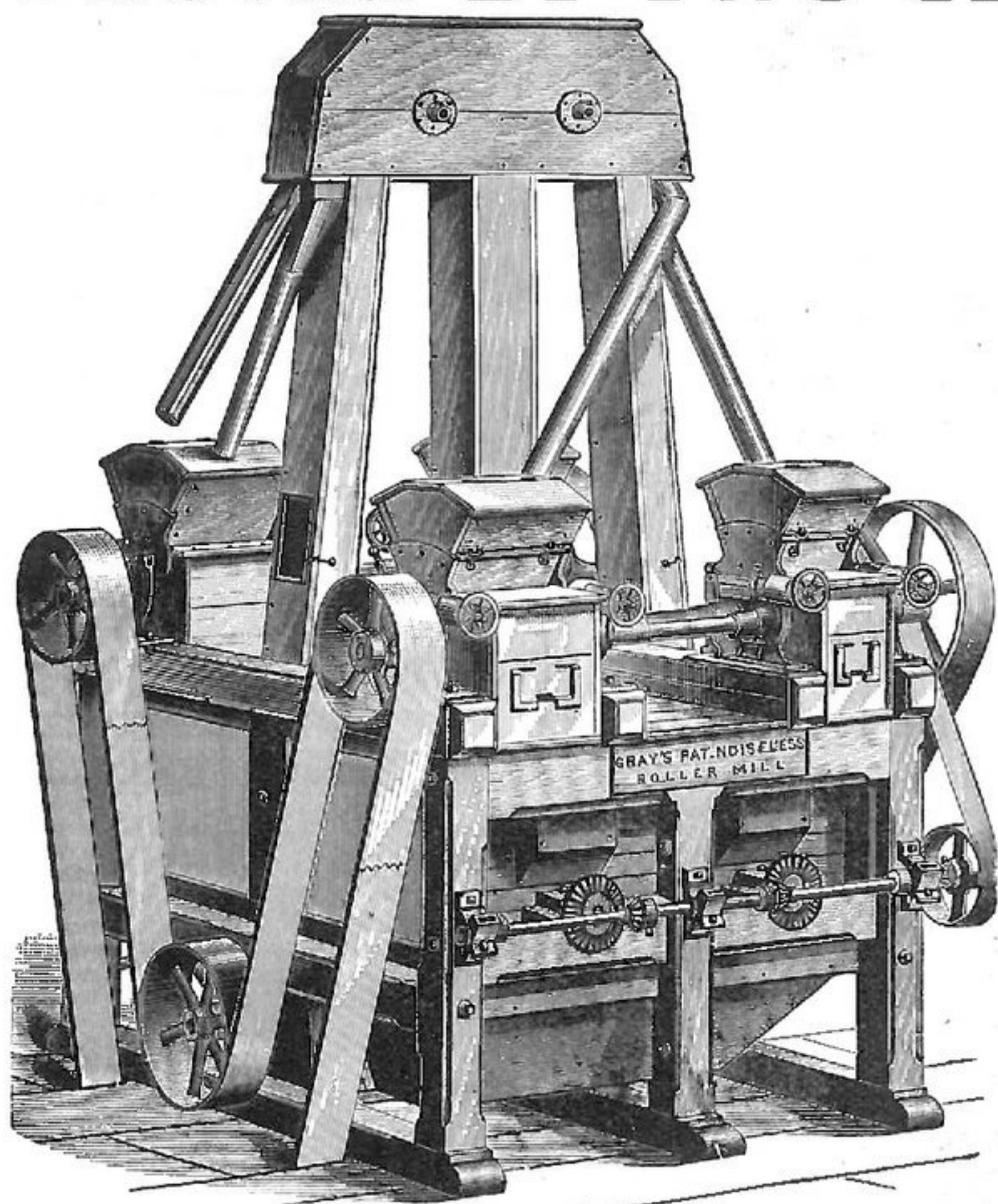
REDUCTION MACHINES,

FOR SMALL MILLS

*Economizes Room,
Takes Less Power,
Saves Millwright Labor.*

Send for Circulars and Prices to

EDW. P. ALLIS & CO.
RELIANCE WORKS,
Milwaukee, Wis.



A tool for Cutting, Leveling and Polishing the Furrows and Face of Millstones.

Eight inches long, 2 1/4 inches wide, 1 1/2 inches thick. Received the highest and only Award given to Polishers at the Millers' Exhibition, Cincinnati, Ohio, June, 1880.

For facing down high places on the buhr, this tool has no equal, and can be done much better and in one-sixth the time than with the mill pick. It is much larger, cuts better, can be used on either face or furrow; can be used until the corundum is entirely worn out on one side and then turned on the other side. Has over four times the amount of corundum and when the corundum is worn out can be replaced in the handle at a small cost. Sent by express, \$3.50. Satisfaction guaranteed, or money refunded. Address

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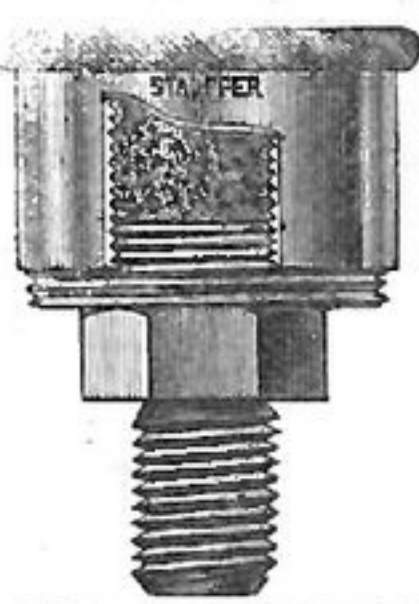
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LUBRICATORS & SOLIDIFIED OIL

The most economical, perfect, practical, simplest, cheapest and elegantly finished Lubricators ever put on the market. One million sold within a couple of years. The Barthel Solidified Oil or Lubricating Compound is used with the Lubricators exclusively. Whoever has once tried this Lubricant will never again use oil or any other lubricating compounds. Send for Illustrated Catalogue.



A DECIDED IMPROVEMENT OVER ANY ROLLS WE HAVE SEEN.

Lancaster, Pa., Aug. 31, 1883.

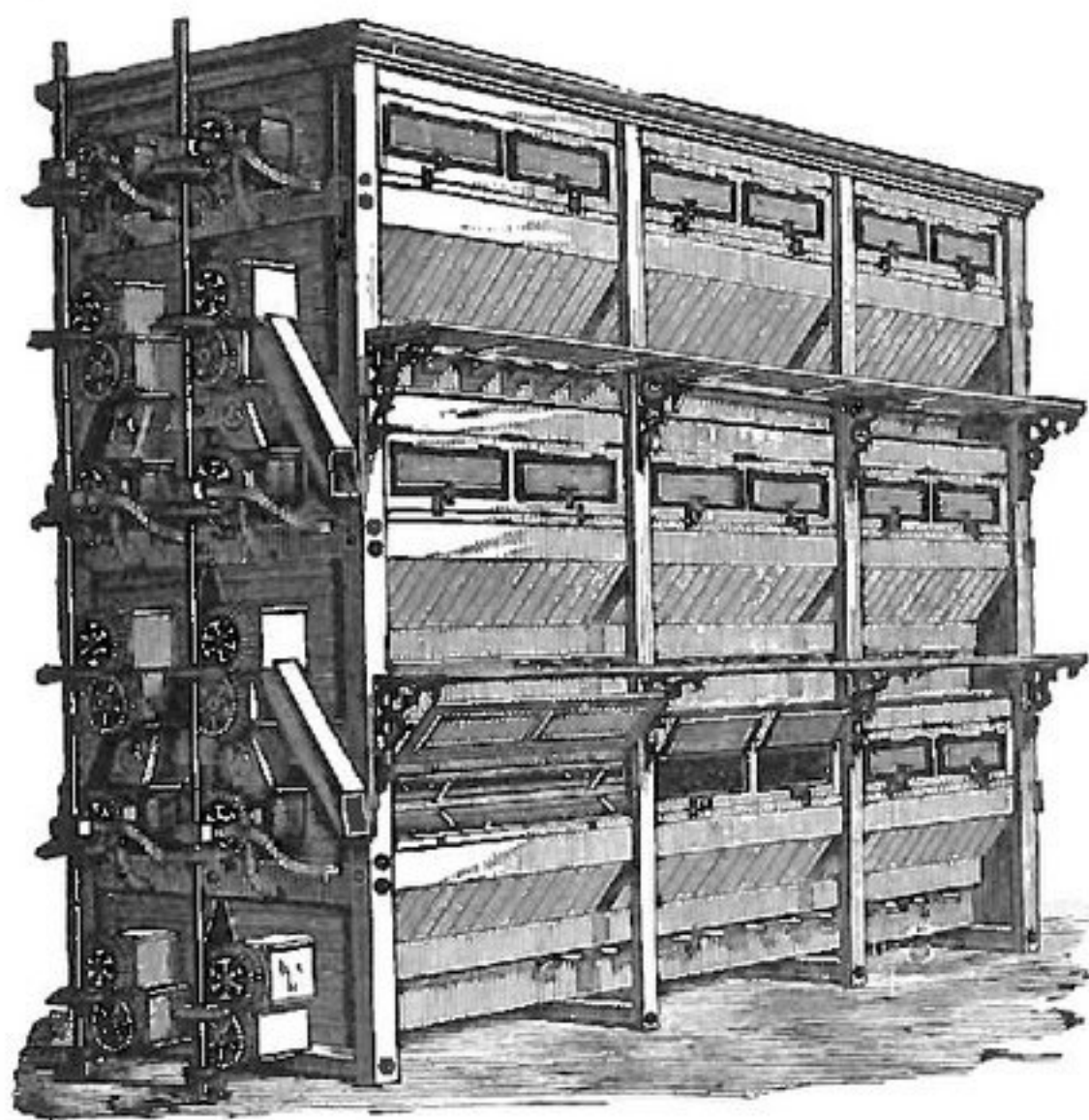
Messrs. Griscom & Co. & McFeely, Philadelphia.

GENTLEMEN: We have now been running your double Roller Mill about 30 days, and it works to our entire satisfaction. The adjusting device by which both ends of the rolls are adjusted at the same time is a decided improvement over any rolls we have seen, as it guarantees uniform work, and the journals being always in line, keeps them running cool. Our bran is well cleaned as you will see by sample sent you. Yours truly, LEVAN & SON.

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Manufacturers Butler Roller Mills, 110 South 4th Street, Philadelphia, Pa.



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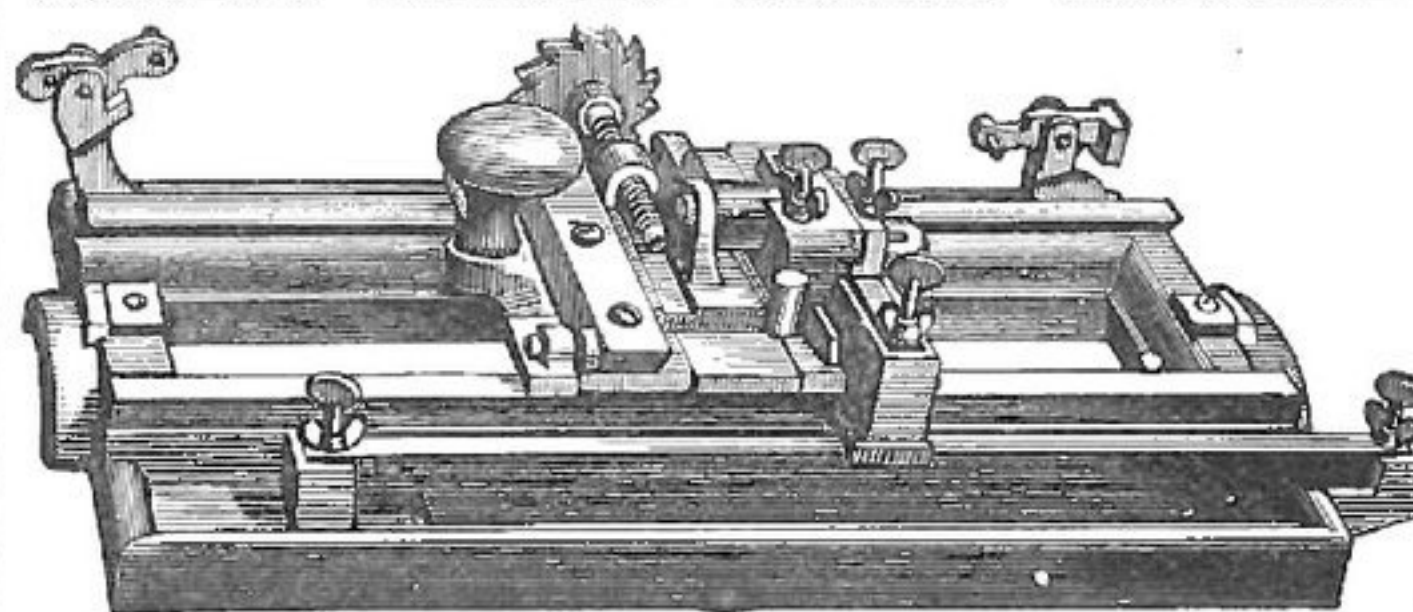
**Impr'd Milling
MACHINERY**

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ALL KINDS MILL SUPPLIES

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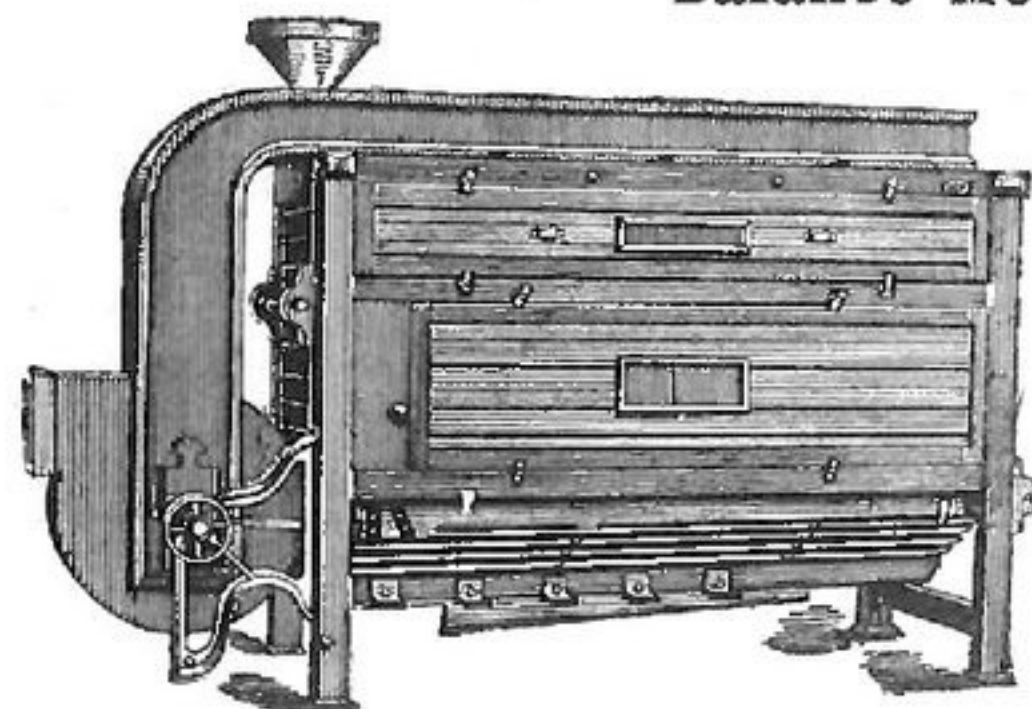
No 1, to face and crack \$25 00
No 2, to face, crack, dress furrows, and will dress any size stone 45.00
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Will do as good work, and is more easily adjusted than any other machine. Sent on 30 days' trial. Address for circulars, containing full information.

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WOLF & HAMAKER'S LATEST IMPROVED MIDDLINGS PURIFIER AND DUST CATCHER

The Only Machine with Two Sieves, for Fine and Coarse Middlings. The Only Machine with Balance Motion, Consequently no Jarring or Shaking.



ADAPTED to all styles of milling, high or low grinding, as fine or coarse middlings can be treated separately on one machine. Economy in space, as the machine is a double one. A perfect cloth-cleaning device. No brushing or wearing of cloth. Licensed Under All Conflicting Patents. We are the Agents for the E. P. Allis Roller Mills, and Mill Builders and Contractors. We are at all times prepared to furnish plans and estimates, and to contract for the erection of first-class mills of any desired capacity from 50 to 500 barrels. Parties contemplating Roller Mills or remodeling old mills will find it to their interest to write for Prices and Terms. Wolf & Hamaker's Latest Improved Bolting Chest. Also Mill Furnishings of Every Description.

OUR DUST CATCHER IS GIVING THE BEST OF SATISFACTION, AND OUR PRICES ARE SUCH THAT EVERY MILLER SHOULD HAVE THEM.

WOLF & HAMAKER, ALLENTOWN, PA.

ON VIEW AT PERMANENT EXHIBITION OF MILL MACHINERY, 36 BROADWAY, NEWYORK.





NOTES.

The work at the proposed electrical exhibition at Speys, Austria, is progressing favorably.

A company has been formed in England to receive the manufacture of beet sugar. An output of 17,000 tons is expected the first year.

The general meeting of the German Millers' Association will this year be held on June 22-25, at Breslau, in Prussia, under the presidency of Herr J. J. van den Wyngaert.

At date of last advice from Germany the weather was cold at night but mild in the day, with strong easterly winds; the crops are considered to be looking hardly so satisfactory as before.

On the night of Friday, March 11, a large flour mill at Knottingley, near Pontefract, Great Britain, in the occupation of Croysdale & Sons, and known as "The King's Mills," was destroyed by fire.

The ship-owners of north England held a meeting to arrange for the withdrawal for four months of one-fourth of the vessels of each owner, with the purpose of raising rates in the steam-freight market.

The London *Daily News* states that the representatives of the Russian railways have offered prizes of 3,000, 2,000 and 500 roubles (roughly £150, £100 and £25) for model grain trucks. The prizes will be given on the first of October next.

At the weekly meeting of the Metropolitan Board of Works, London, held March 21, the clerk read a letter from the Hampstead Vestry, urging that the interests of public health require bakehouses to be licensed and subject to regular supervision.

It appears from the statement of the Indian Budget, that the exports to England of Indian wheat have risen from 8,477,479 cwt. in 1882, to 11,243,497 cwt. in 1883, and to 19,500,000 in the first ten months of the current financial year.

The American Consul at Buenos Ayres expresses the belief that the Argentine Republic will some day be one of the great grain producing countries of the world. It is already an exporter of wheat. Patagonia, once thought so wild and desolate, is also pointed out as a future grain field.

A phenomenal cold wave last week swept over Switzerland and the adjacent departments of France, doing enormous damage to agriculture. One-third of the vintage crop is destroyed. At Macon and vicinity the vines were devastated by the frost. The damage in the Saone valley is estimated at many millions of francs.

A fire broke out in Mr. James Ryder's flour mill at Monkwearmouth, Sunderland England, shortly before nine o'clock on the evening of Friday, March 7, and in spite of all efforts raged till past four on Saturday morning, by which time the mill and granary were completely destroyed. The exact origin of the fire is not known.

On Friday morning, March 28, a fire broke out in Quarter Grain mills, near Denny, Stirlingshire, England, the property of Mr. John Harvie Brown, of Dunipace, and tenanted by Mr. McWatt. Before the fire was subdued the kiln became a total wreck. The damages were partly insured. It is thought that the fire originated through a naked light being inadvertently left in close proximity to some wood.

The depression in English shipping has become extreme. The ports are crowded with destitute and suffering sailors. In Shields alone there are 4,000 seamen out of employment. A hundred steamers are lying idle upon the Tyne. Ten thousand laborers in Tyne shipyards are out of work, and as many more in the Sunderland shipyards. Business is slack in the yards along the Clyde, but so far there has been less suffering than in the other ship building localities.

A foreign trade journal states that the "commercial depression" existing in Belgium amounts almost to a "crisis," and expresses the opinion that the number of business failures and attending circumstances corroborate its view. There were five times as many failures in 1883, as there were in 1858, when the number was only 42. In 1872 there were 97, in 1882 they increased to 189, and in 1883 to 235. Meanwhile the compositions paid decreased from 15 per cent. in 1870, to 10.41 per cent. in 1882, and 6.41 in 1883.

Cathal Mills, situated on the banks of the Don, about eight miles from Aberdeen, was burned to the ground very recently. The mills belonged

to Sir William Forbes, of Craigievar, and were tenanted by Mr. Robert Esson. The buildings were three stories in height. The basement floor was used as a barley mill, and in the two upper floors the manufacture of stocks was carried on. The whole of the machinery and a considerable quantity of manufactured goods were burned.

Paraguay has got a railroad, says the *American Machinist*. It is hardly up to the level of our worst southern roads, but it is a beginning. The road is not quite forty miles long, and it is traversed by a single train only four times a week. But if they have few trains, their accommodations for passengers are exceedingly varied, for they carry four, classes. The distinction between the third and fourth classes is that the former are carried in box cars with seats, and the latter in platform cars without seats.

The Buenos Ayres *Standard* of March 7, calls attention to the increasing material prosperity of the Argentine Republic. The receipts of wool, wheat and linseed are very heavy, the clip of the first-named being at 30,000 bales in excess of last year. The other crops are said to be double those of the preceding season. The most important element in the increased business activity and production, is the contract for about 900 miles of new railroad to facilitate transportation from the interior to the seaboard.

The census of England and Wales for 1881, has recently been published in all its details, and is not without its peculiar interest to the milling and baking trade. The following figures indeed will be found to be somewhat instructive, as showing the number engaged in the various trades:

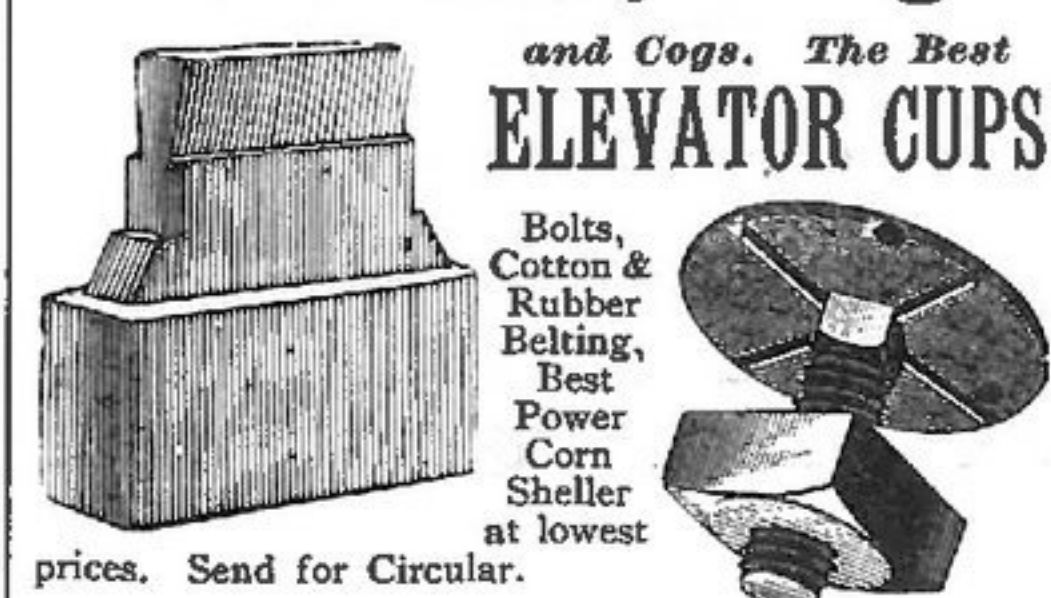
	1871.	1881.
Millers	29,720	23,162
Corn and Flour Merchants	11,964	9,183
Bakers	52,733	71,032
Pastrycooks & Confectioners	9437	12,483
Millwrights	7,538	6,940

Mr. Guillermo Cranwell, Consul-General of the Oriental Republic of Uruguay, writes to call attention to the Uruguayan National Exhibition, which opened at Montevideo on April 19, 1884. The exhibition is held under the auspices of the Executive Power, and organized and managed by the General Board of Immigration and Agriculture. It includes foreign agricultural machinery, implements, and fencing material; plants and cereals, as well as horses, cattle, and sheep, for breeding purposes. No charge are made for space. The usual gold, silver, and bronze medals will be awarded.

Reports from all parts of the United Kingdom indicate the prospect of a wheat crop this year above the average. The plant has been benefited by recent rains, though somewhat discolored by the east wind that has prevailed the last fortnight. The crops of France and Spain will be above the average. The requirements for consumption in Great Britain for the next three months are 6,000,000 quarters. The prospective receipts from India are quite uncertain; from Russia, nearly the whole crop of 1883 is expected; from Australia, 2,000,000 quarters; 1,000,000 quarters are now on passage from California. The receipts of wheat and flour at the waterside are 4,000,000 quarters, and on passage 2,000,000, enough to last the country for the next three months. The stock of wheat on hand in Great Britain at the present time is 50 per cent. more than in 1883, and double that of 1882.

The most admirable branches of agricultural administration in Prussia are those which pertain to education and research, says a correspondent of *Bradstreet's*. There is a high school of agriculture in Berlin, receiving a state subscription of 86,400 marks annually; the agricultural college at Poppelsdorf has a grant of 51,150 marks; the pomological institutes of Proskau and Geisenheim receive 23,925 marks between them, and the Laboratory of Agricultural Chemistry in Weisbaden gets 3,600 marks. In every province of the kingdom there is at least one agricultural school for boys. The present number of these schools is sixteen, and in 1880 there were 1,676 pupils, or about 100 as the average for each school. The expenditure upon these useful institutions is not extravagant, their cost, including new buildings and repairs, being only 267,300 marks according to the estimate for 1883-84. The agricultural stations of Prussia have acquired world-wide fame. They are partly self-supporting, but all but one appear to receive a state subsidy, and nearly all are helped by agricultural societies or private subscriptions. The stations are at Königsberg, Insterburg, Danzig, Dahme, Regenswalde, Eldena, Posen, Breslau, Halle, Kiel, Hildesheim, Göttingen, Münster, Geisenheim, Marburg, Bonn and Bremen. The experiments conducted at these stations are of value to the whole world, a large proportion of the new knowledge recently gained by agricultural chemists having originated from them.

The Best Conveyor Flights



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MILL PICKS.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address **GEO. W. HEARTLEY**, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

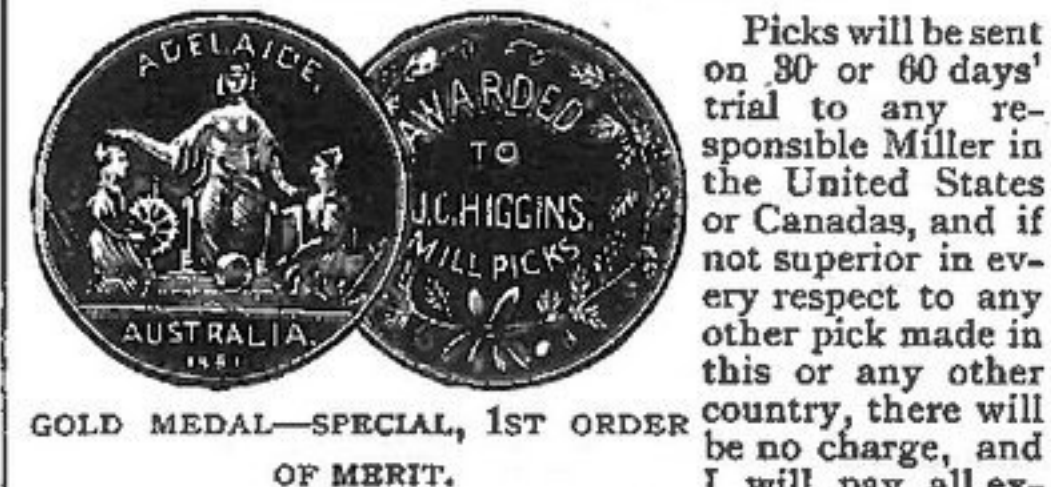
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MILL PICKS.

168 KINZIE ST., CHICAGO.



Picks will be sent on 30 or 60 days' trial to any responsible Miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada. Send for Circular and Price List.



CORN & COB CRUSHERS
PRICE, \$15.00.
Send For Circular.
SHAFTING, PULLEYS & HANGERS.
Pulleys a Specialty, Large or Small. Address,

T. B. WOOD & SONS, CHAMBERSBURG, PA.

GREAT TRIUMPH IN INVENTION

The Simplicity so long sought after in Roller Mills attained at last.

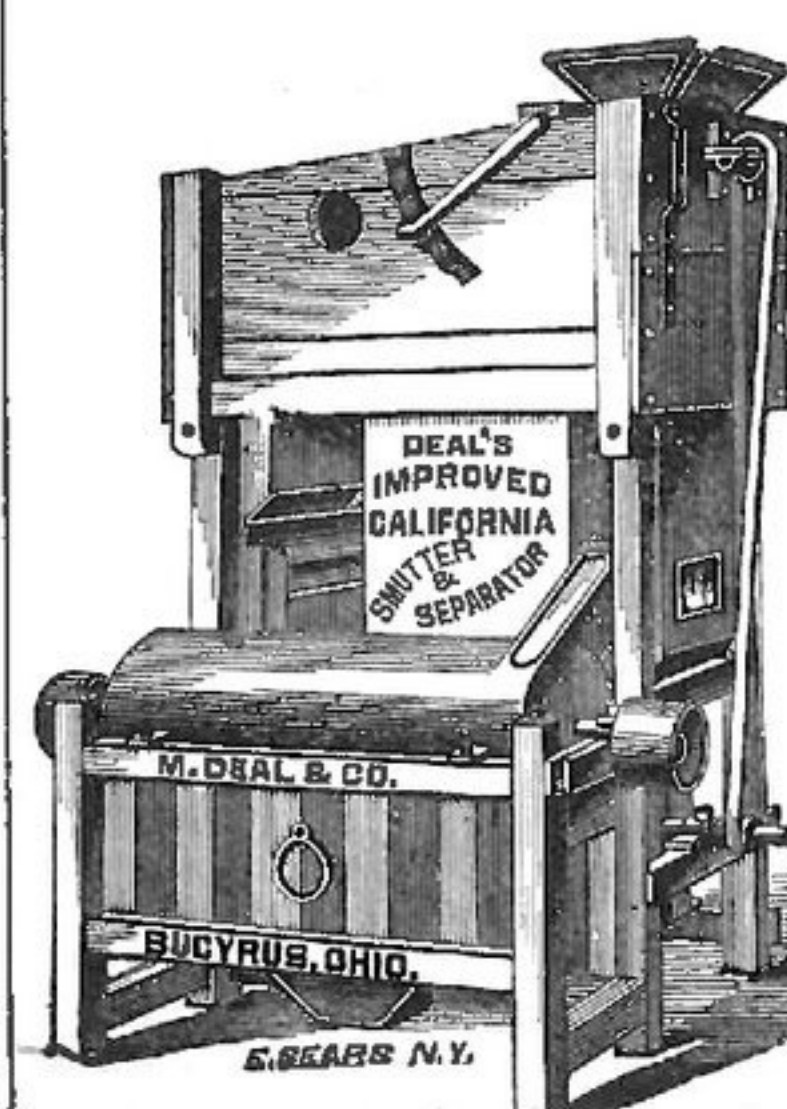
ONE, TWO, OR FOUR BREAKS IN A SINGLE FRAME

SIZES OF ROLLS 9x18 and 7x14 INCHES.

NO CROSS BELTS. NO FRICTION. NO LOSS OF POWER.

Reduction Rolls, Bolting Cloth, Purifiers, Middlings Mills and Bolting Chests. General Mill Furnishing Supplies.

W. H. BARBER & CO., SOLE MANUFACTURERS, ALLENTOWN, PA.



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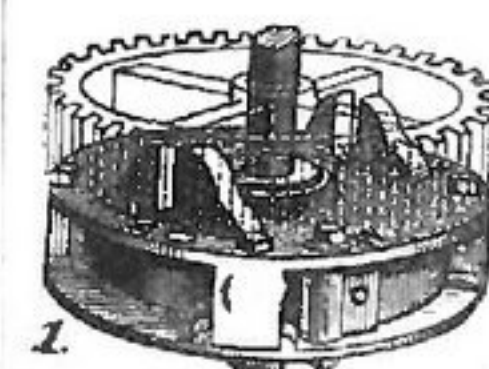
DEAL'S CALIFORNIA MAGNETIC
BRUSH SMUTTER
AND
SEPARATOR COMBINED

Warranted The Very Best In America.

The purchaser being the judge after 60 or 90 days' trial. We manufacture a complete line of Grain Cleaning Machinery, and guarantee every machine to give entire satisfaction or no pay. Send for circulars, it will pay you.

M. DEAL & CO.,

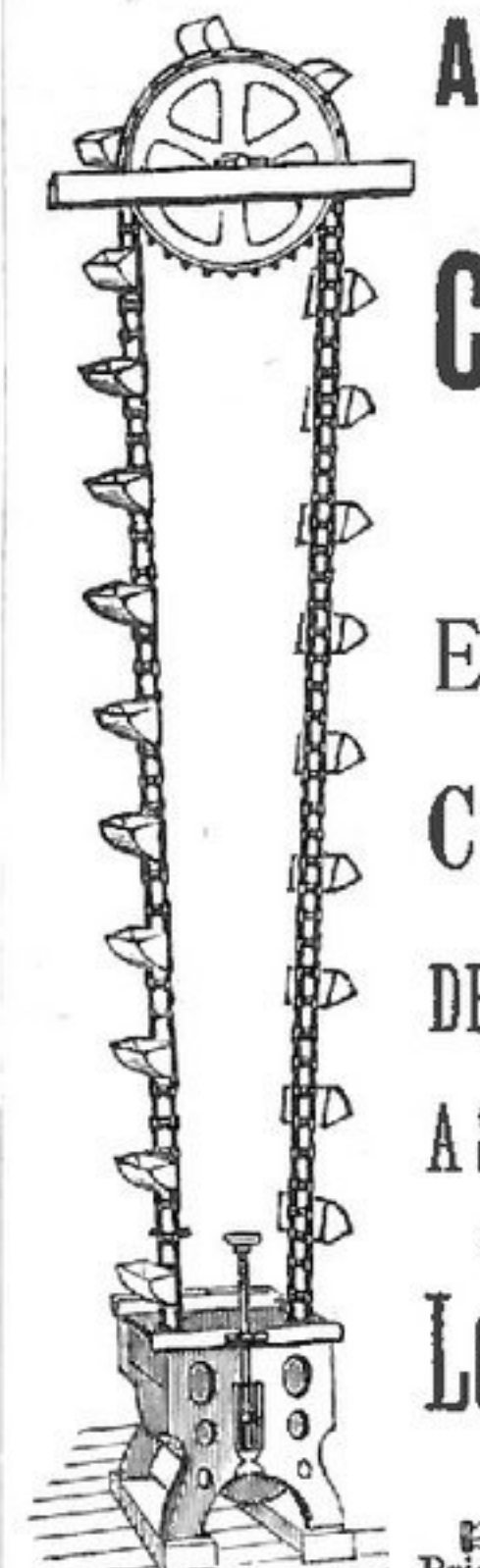
Sole Owners and Manufacturers,
BUCYRUS, OHIO, U. S. A.



EUREKA COIL SPRING

Warranted to Prevent Backlash. Over 1,000 in use. Equilibrium Driving Pulley Prevents Side Pull on Mill Spindle.

JOHN A. HAFNER,
PITTSBURGH, PENN.



ANTI-FRICTION

Roller Detachable

CHAIN BELTING

FOR
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CONVEYORS,
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AND FOR
DRIVING PURPOSES.

A Superior Chain Belting

Manufactured and Sold by

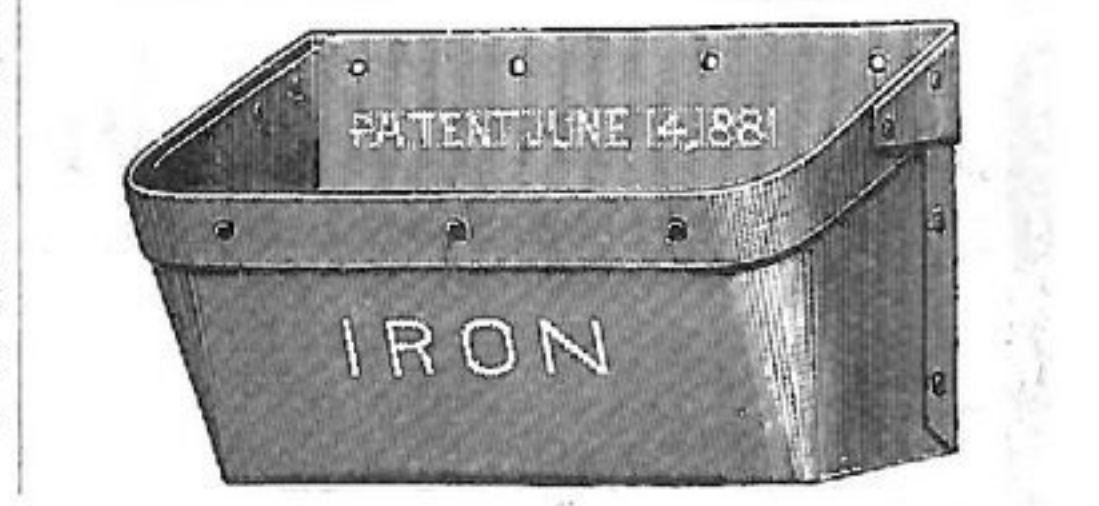
Lechner Mfg. Co.

COLUMBUS, OHIO.

Send for Catalogues and Price List.

Manufacturer and Dresser of

THE BOSS ELEVATOR CUP



is gaining favor every day. Over 13,000 sold in one day in three different States. My capacity in my new shops is 6,000 per week. I carry 30,000 cups in stock and can take care of any size order.
W. P. MYER,
19 and 21 E. South St.,
INDIANAPOLIS, IND.

Editor's note:
Page 13 missing

HAS BEEN AWARDED
FIRST AND ONLY PREMIUM
AT THE
Millers' International Exhibition.



Office of THE MILLING WORLD.

Buffalo, N. Y., April 30, 1884.

The week past has been remarkable for fluctuations in wheat values, yet it would appear difficult to trace the causes to any tangible source. There have been some sales for export but immediately the market stiffened up because of orders, the latter ceased and could only be lured back again by concessions. Nevertheless a firmer feeling rules, and values are materially above those ruling two weeks ago. There is very little purely speculative buying, although, could confidence be placed in prognostications, higher than current quotations will be secured before the week closes. It is daily becoming more apparent that we have but a small, if any, surplus of good milling wheat. It is even asserted in many quarters that outside of supplies actually under the control of millers, none is to be had. This of course, must be accepted with more than the ordinary degree of allowance, still that our surplus is small appears not to admit of question. Much interest is being shown as to the condition of the growing crop, and it takes but little to sway the market a point either way, as reports favorable or otherwise are received. The simple fact that values are so easily influenced goes far to indicate that the market is practically without intelligent control and guidance. As a rule, crop reports from abroad and at home are of a character favorable to satisfactory harvests. It is, of course, too early to speak with any degree of definiteness, but present indications point to an increase in acreage at home, which ordinarily would indicate an increase in product, and advices from abroad while not quite so rosy-hued as two weeks since cannot be construed as evidencing any material reduction from recent anticipations of good harvests. As before stated wheat values both at Chicago and New York are above those of two weeks ago, and by all odds firmer in character, although operations partake very largely of the character of scalping. The actual condition of business so far as actual buying and selling are concerned, might very appropriately be summed up in the one word, dull.

It is gratifying to have an opportunity of noting a change for the better, especially in the eastern flour markets, and at this writing there is much encouragement to be found in the situation, many dealers expressing confidence that lowest values have been touched. Flour is about 10 to 25c higher. At the advance there is a good deal of confidence; holders had this to begin with, buyers were slow to recognize the strength of the market; now buyers are beginning to realize that they have held off too long and their attempts to buy are confronted with generally well held stocks, holders asking higher prices on all brands having established reputations. Even obscure and unknown stencils are bracing up; the "soft snaps" have all disappeared and flours are selling all over the market on their intrinsic merits. Exporters find difficulty in getting enough flour on the basis of \$3.25@3.50 for low extras, which are generally held at \$3.50@3.75 or \$3.10@3.40 for supers, the latter extreme, and \$2.60@3.00 for No. 2. These grades are all very scarce. The trade brands are in better demand, and all through the market is in better shape, without being specially active. Spring wheat patents are in brisk demand. Good winter wheat straight flours are in good demand, but buyers and sellers are too far apart for much business. Rye flour is steady at unchanged prices, demand and offerings moderate. Corn goods are quiet and steady at unchanged prices. Bag meal is irregular. Mill feed is firm with a fair demand.

FOREIGN EXCHANGE.

The market for sterling is unchanged and featureless, business being quiet and rates fairly steady. The amount of gold thus far reported engaged for Saturday's steamer is \$1,400,000. The posted rates are 4.88½ for 60 days and 4.90½ for demand. The actual rates were: At 60 days' sight, 4.87½@4.87¾; demand, 4.89¼@4.89½; cables, 4.89¾@4.90; commercial, 4.86¼@4.87½. Continental exchange quiet and steady; francs, 5.17½@5.16½ and 5.14¾@5.13¾; reichsmarks,

DUFOUR & CO.'S CELEBRATED BOLTING CLOTH.

95¼@95½ and 95½@96; guilders, 40¾ and 40½. The closing posted rates are;

	60 days.	30 days.
London	4 88½	4 90½
Paris francs	5 15½	5 13½
Geneva	5 15	5 12½
Berlin, reichsmarks	95½	96½
Amsterdam, guilders	40¾	40½

BUFFALO MARKETS.

FLOUR—City ground clear Duluth spring \$5.50@6.00; straight Duluth spring, \$6.00@6.25; amber, \$5.75@6.00; white winter, \$5.75@6.00; new process, \$6.75@7.00; Graham flour, \$5.50@5.75. Western straight Minnesota bakers, \$6.25@6.75; clear do, \$5.50@6.00; white winter, \$6.00@6.25; new process, \$7.00@7.50; low grade flour, \$3.50@4.00. CORNMEAL—Market steady, with a fair demand. Coarse, \$1.15; fine, \$1.20 per cwt. RYE FLOUR—In fair demand at \$3.75@4.25. OATMEAL—Ingersoll, \$5.75; Bannerman's granulated, \$6.00; Schumacher's Akron, \$6.25 per bbl. BUCKWHEAT FLOUR—Demand fair at 3.50 per cwt. WHEAT—Firm. Sales ten car-loads milling white at \$1.10½, three do milling red at \$1.07, and 1,500 bu No. 1 hard Northern Pacific at \$1.10. For this grade, at the Call Board \$1.17 asked, \$1.14 bid in car lots; \$1.15 asked, \$1.18 bid May; \$1.14 asked, \$1.12½ bid June. Red and white winter closed firm; holders asking an advance. CORN—Active and 1c higher. Sales forty car-loads at 60¢@61½c, and thirty-eight do. new mixed at 59¢@60c. At the Call Board 61½c was asked, and 60½c bid cash, 62c asked May; 63c asked, 60½ bid June, 65c asked, 60c bid June. OATS—Steady to firm. Sale two car-loads No 2 white at 41c and three do mixed at 37½@38c, to arrive. BARLEY—Scarce. No. 1 Canadian 93¢@95c; No. 2 do 89¢@90c; No. 3 do 73¢@75c. RYE—No. 2 Western, 68¢@68½c.



HOWE'S Challenge Sample Envelope

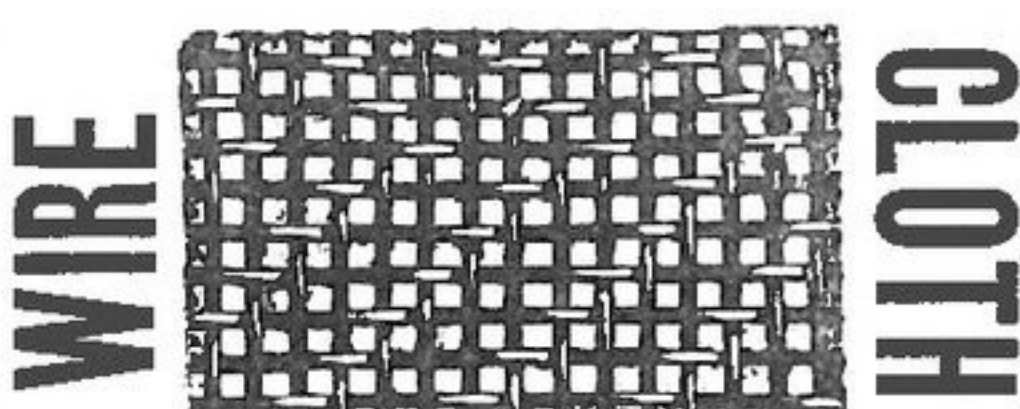
The simplest, cheapest and best sample package in the world for sending samples of flour, grain, seeds, etc.

No. 0, hold 1 oz. sample, 65c pr 100	
No. 1, " 2 to 3 " " 85c " 100	
No. 2, " 4 " 6 " " 1.20 " 100	
No. 3, " 6 " 9 " " 1.75 " 100	
No. 4, " 8 " 12 " " 2.40 " 100	

Sent by mail, postpaid, to any part of U. S. Sample sent free. Address, **Howe Pattern & Manfg. Co.**, 443 Baggs Street, Detroit, Michigan.

J. G. CRAMER, Rochester, N. Y., Agent for Western New York.

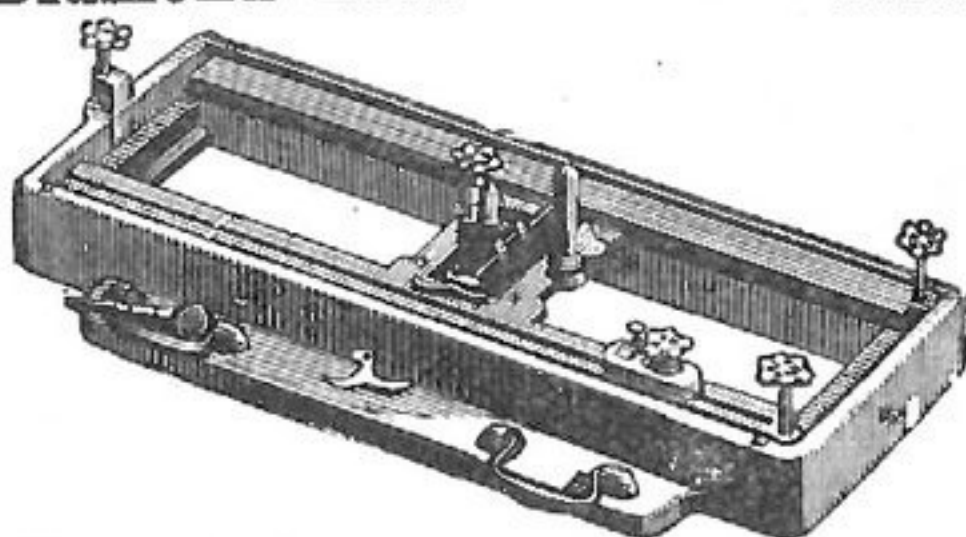
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FOR FLOURING MILLS. Made expressly for Steel or Plated Wire Cloth, even mesh, and superior in every respect to any cloth in the market. Also heavy steel, tempered Wire Bolting and Bran Duster Cloths.

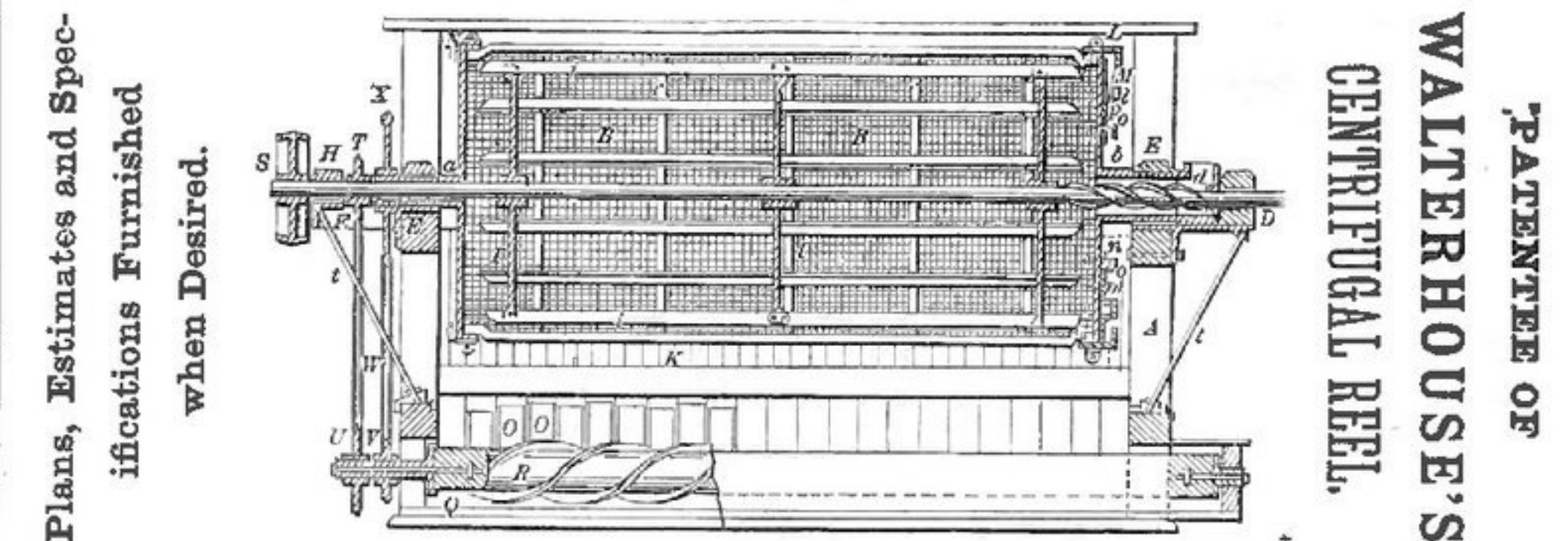
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No screw feed. A new invention. Automatic rod feed. The only perfect, practical feed ever invented for a millstone dresser. A revolution. No ratchet wheel, springs, pauls and levers to contend with. Can cut over 1,000 cuts per inch right or left, reversed with the tip of one finger, while in motion. Feed can instantly be regulated to cut fine or coarse with one hand while the carriage is operated with the other, by the use of this rod feed can push the cross head right or left for quick operation. Self reversing when pushed to either side of carriage. A machine of special merits, is specially adapted for deep facing, as the feed can instantly be regulated to protect the diamond point, therefore need not raise the diamond on account of a slight raise. No extra attachment required to furrow. No change to be made on the cross head. All regulations or adjustments are made without the use of a tool to crack, face or furrow right or left hand burrs. Is warranted as represented, and is specially guaranteed to be more easily operated and quickly adjusted than any of its class, is convenient to set over spindles as machines are ample wide. Also a new improved patent diamond holder, the only perfect one. Other good improvements not mentioned. Sold on trial to responsible parties. Prices reasonable. Send for circular giving full description.
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ROLLER MILLS A SPECIALTY.
GENERAL AGENT FOR STEVENS ROLLS AND GENERAL MILL MACHINERY.
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PATENT MILLSTONE CEMENT
Invaluable to Millers for Repairing and Filling the Joints, Cavities, and Seams in French Burr and other Millstones.

PRICE PER CASE, \$5.00. SEND FOR CIRCULAR.
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Seamless Rounded Corners
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RUNS EASY
STRONG & DURABLE
EMPTIES CLEAN.

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Is the only machine whereby the greatest yields of
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IN THE WORLD.

**THE POSITIVE ADJUSTMENT
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Is Strictly Self-Protecting
The Best Adjustment in the World.
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Perfect Granulator
Grinds Cool, Self-Oiling, Great Saving of Power.
Simplicity and Durability Combined.

Satisfaction Guaranteed on all our Goods. Send for Descriptive Circular, giving Prices, Sizes, Terms, etc.
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Steel Being Used in its Construction.
PRICE, 30.00. RIGHT-HAND MILL.
CAPACITY 75 BUSH. PER HOUR.
Thousands of these Crushers are now in use, and giving entire satisfaction.
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Builders from the Raw Material of

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WE ARE THE SOLE OWNERS FOR THE UNITED STATES, OF ALL THE PATENTS UPON THIS ROLLER MILL.

This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.

500 BARREL MILL IN MISSOURI.

Read what an Old Miller who has Thirty-Four Pairs of these Rolls in Constant Use, Says:

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Gentlemen: In regard to the workings of our new mill erected by you, will say it is working fully up to and beyond our expectations. Our average work is fully 88 per cent. over your guarantee. Since starting our mill last July we have had no complaint of our flour from any market where sold. It gives universal satisfaction, and we have it scattered on the trade from Chicago to Galveston, Texas. Our yields are all that are attainable. We have tested it on both Spring and Winter wheats with satisfactory results on both varieties. Since the mill was turned over to us we have not changed a spout or a foot of cloth, nor have we found it required to make any changes. We have run as long as six days and nights without shutting steam off the engine, not having a "choke" or a belt to come off. The mill is entirely satisfactory to us, and for a fine job of workmanship, milling skill and perfection of system, we doubt if it is surpassed in the United States to-day. It is certainly a grand monument to the ability and skill of Col. C. A. Winn, your Milling Engineer and Designer. You may point to this mill with pride and say to competitors, "You may try to equal, but you will never beat it." Wishing you the success that honorable dealing deserves, I am,
Yours, etc.,
R. H. FAUCETT, PRES.

500 BARREL MILL IN ILLINOIS.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Gents: We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.
Yours respectfully,
DAVID SUPPGER & CO.

125 BARREL MILL IN INDIANA.

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Gentlemen: The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill-furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantees, and the capacity runs over your guarantees. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.
Yours truly,
J. T. FORD.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.

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Mill Builders & Contractors--Guarantee Results

Motive Power and Entire Equipment of a Modern Mill Furnished under one Contract.

CHEAPEST STEAM PUMP
IN THE WORLD!

THE UNIQUE
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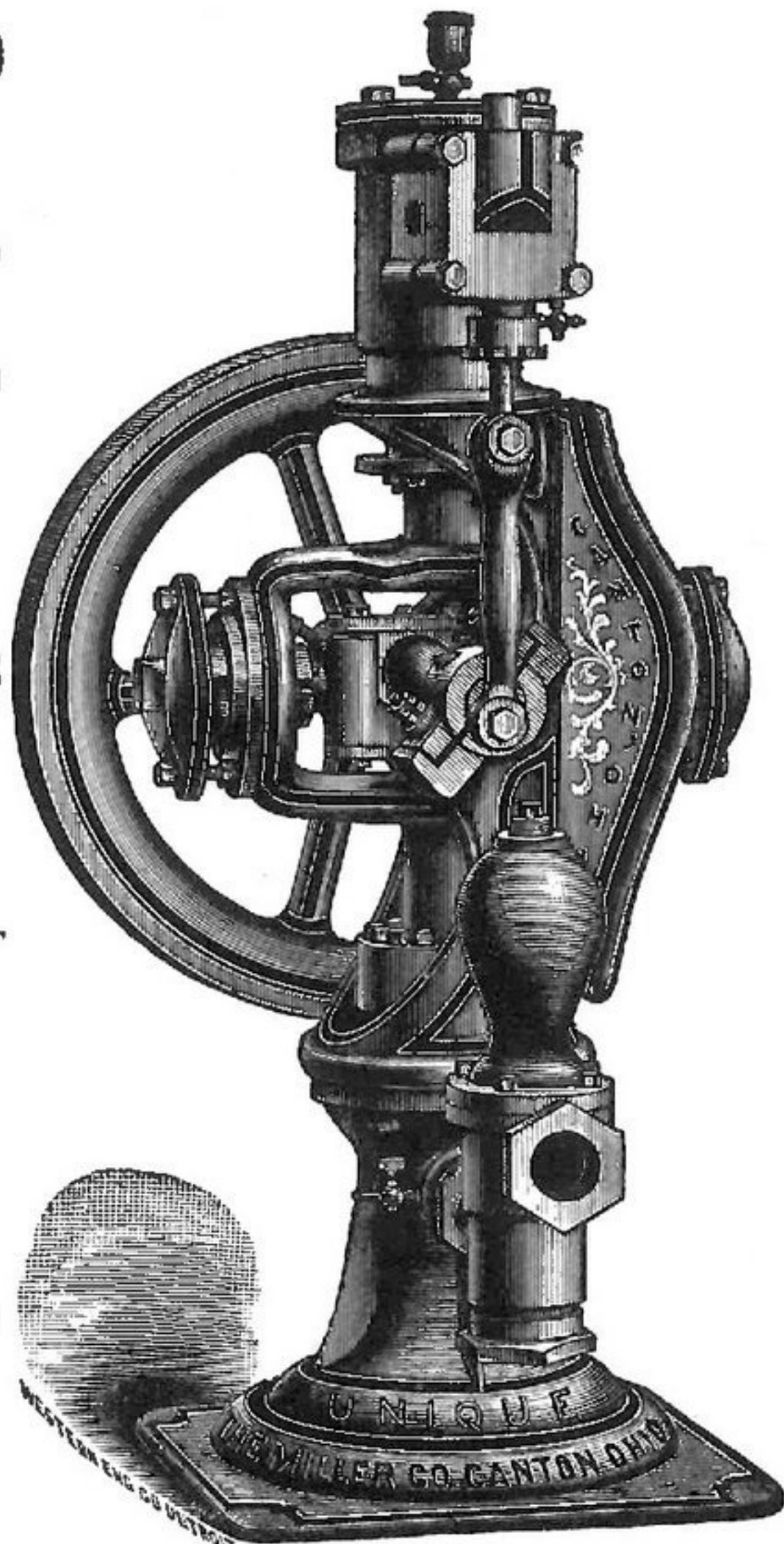
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WE ARE GLAD TO MAKE QUOTATIONS ON
Any Thing a Miller Needs.

KEYSTONE CENTRIFUGAL REEL

Drag Brush Feed, Tightest Heads, Best Results. Cheapest and Best on the Market. Adapted to all Kinds of Milling.

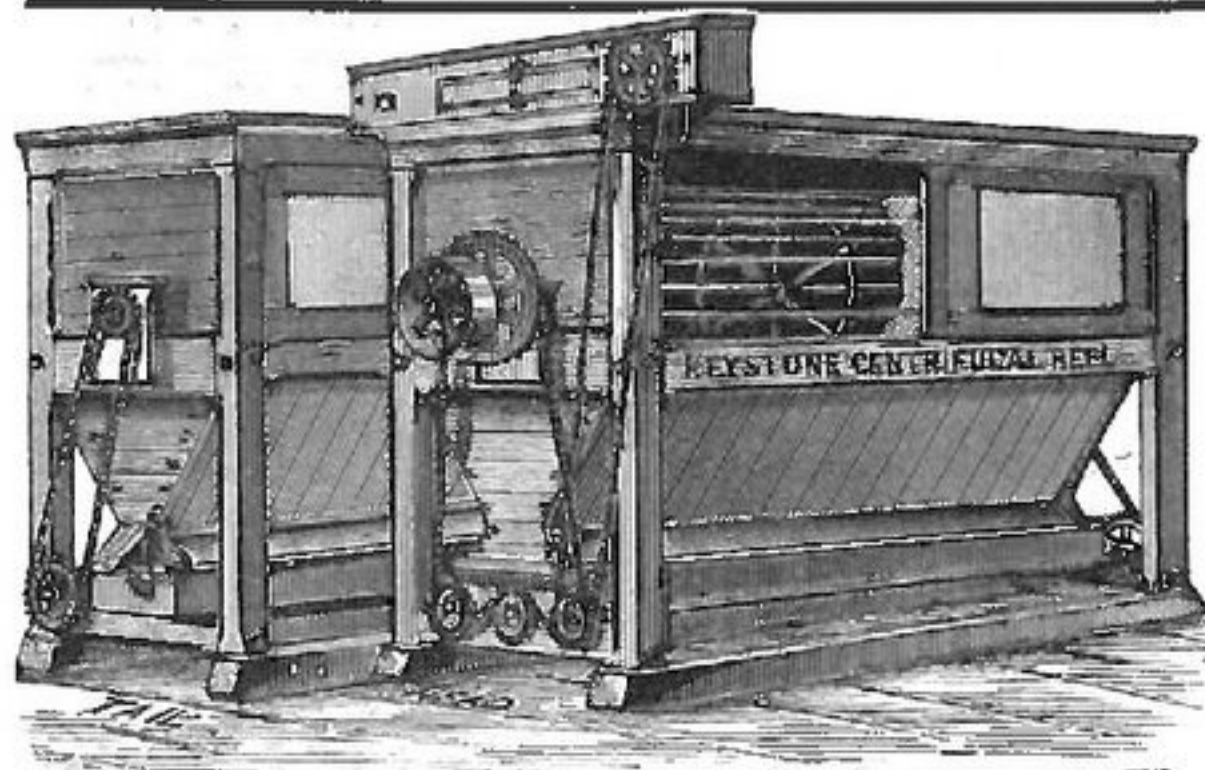
MR. C. K. BULLOCK, PHILADELPHIA, PENN.

Dear Sir: The No. 3 "Keystone Centrifugal Reel" I bought of you works satisfactorily. I think it is one of the best machines I ever put into my mill and would not do without it if it cost double the amount of your price list.
Yours truly,
JACOB H. LANDIS.

VERKES, PA., Nov. 22d, 1883.

The New Drag Feed Thoroughly Protects the Silk. Sent on Trial to any Responsible Miller. For Circulars, Prices, and Full Particulars, Address the Manufacturer,

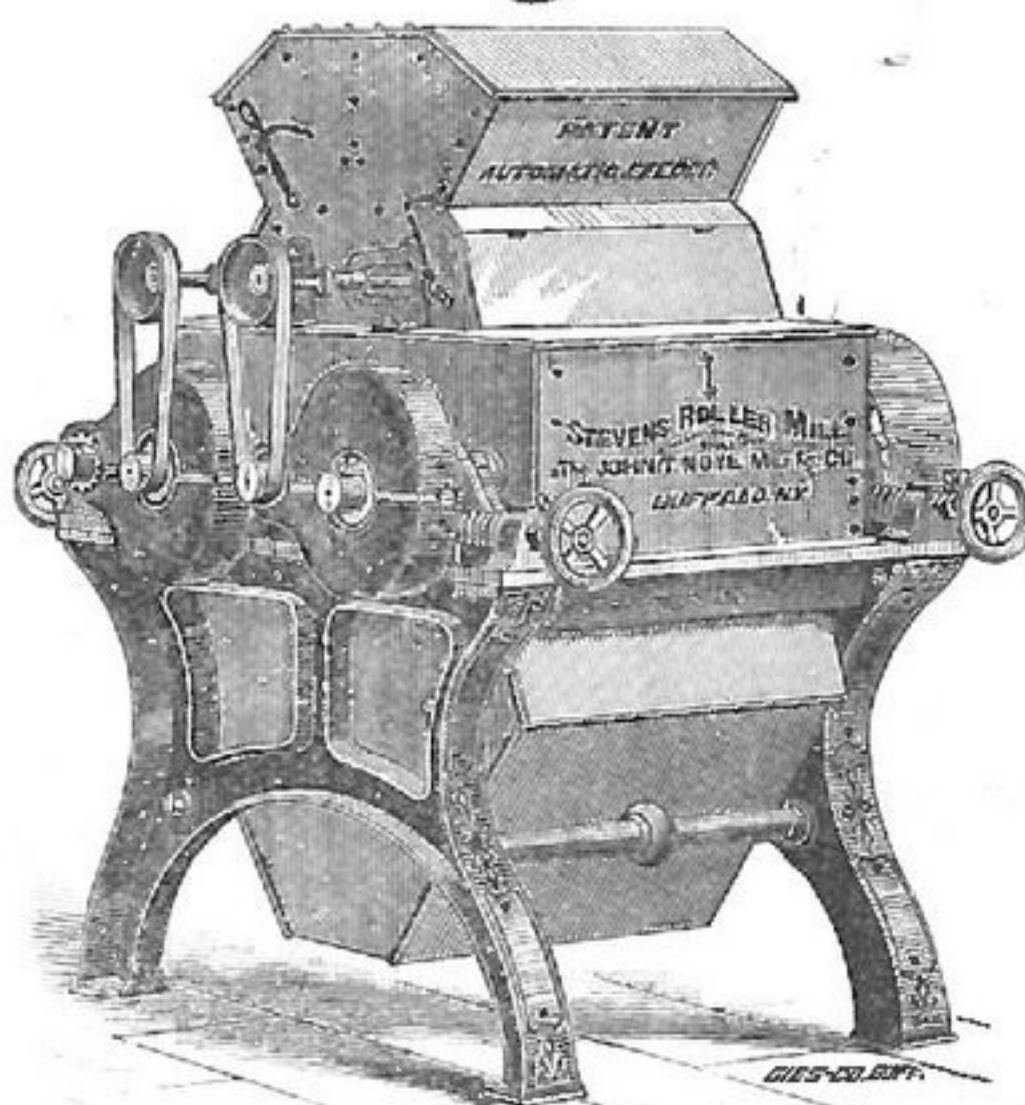
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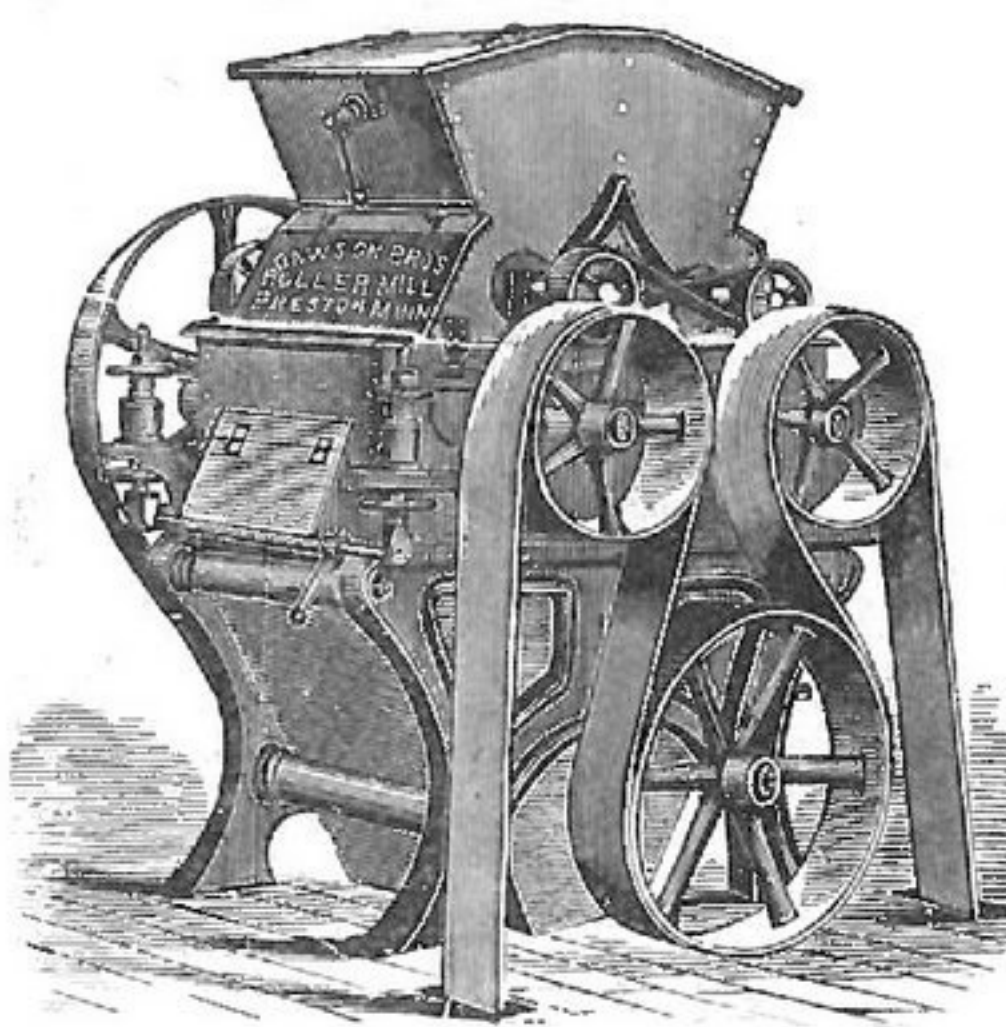
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THEY WERE MADE IN 1881 AND HAVE SINCE PASSED THROUGH A FIRE.



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Manufacturers of the Celebrated Cranson-Dawson
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RE-GRINDING AND RE-CORRUGATING ROLLS!

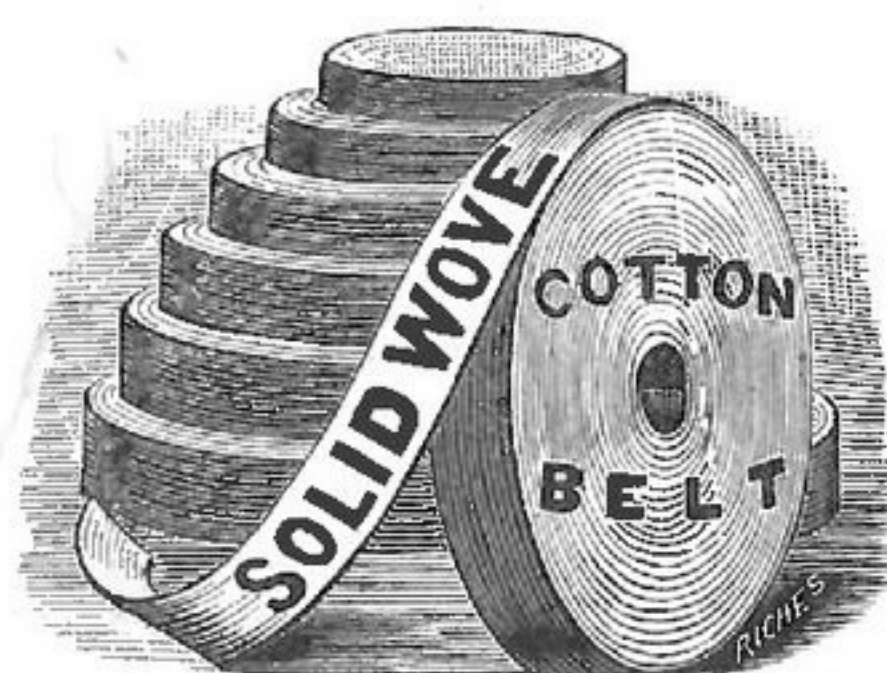
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